Introduction to Indonesia

Indonesia is the largest archipelago nation in the world (please see figure 1 below)

Figure 1. Geography of Indonesia

Source: The role of Perdami in reducing blindness in Indonesia. Prof. Dr. Nila F. Moeloek, Chairperson of Indonesia Ophthalmologist Association (IOA)

The country has 17,508 islands. Sixty percent of these islands, i.e., about 7,000, are inhabited. It is divided into 34 provinces, headed by a governor. The provinces have been divided into cites called ‘kotamadya’ or ‘kota’ and ‘kabupaten’ that include smaller towns and rural areas. A mayor heads a city while a bupati heads the kabupaten. Each kotamadya and kabupaten has been divided into ‘kecamatan’. Kecamats in kotamadyas have been further divided into kelurahan, while those under kabupaten have been divided into ‘desa’. Indonesia has about 70,000 villages or desa, 7,000 kecamatan (sub-district) and 511 kota and kabupaten. Each of the cities has at least a domestic airport

All the inhabited islands have internet and mobile connection. Almost all the inhabited islands have electric connection but some rural areas still remain outside connectivity. This comprises about 20% of the total population in the country. Sixty percent of the Indonesians live in Java and Bali. On the other hand Papua province, one of the biggest provinces, as a whole, has 3-4 million people out of the 240 million in the whole country.

A medium term plan is being developed for the next President It will include blindness prevention program as a means to alleviate poverty.
Annexure 1: Demography and population

According to the 2010 national census the population of Indonesia is 237.6 million with 58% living on the island of Java, the world's most populous island. Indonesia's population is projected to surpass USA and become the biggest after China and India by 2043. According to another estimate the total population of Indonesia is 251,160,124 (July 2013 est.)

For the decade ending in 2010, Indonesia's population growth was 1.49 percent. Indonesia includes numerous ethnic, cultural and linguistic groups, The crude birth rate is 19.1, the crude death rate is 7.2, the total fertility rate is 2.19. The infant mortality rate is 28.8 per 1,000 live births.

Age structure-wise the population proportion is as follows 0-14 years: 26.6%; 15-24 years: 17.1%; 25-54 years: 42.2%; 55-64 years: 7.6%; and 65 years and over: 6.4% (2013 estimate).

The urban population is 44% of total population (2010) and the rate of urbanization was estimated at 3.3% per annum between 2005 and 2010. The future projection is 1.7% between 2010 and 2015.

The sex ratio at birth is: 1.05 male/ female, among under 15 years: 1.04 male /female; among 15-64 years: 1.01 male /female; among 65 years and over: 0.79 male /female, while the total population-wise it is 1.0 male/female, as per a 2010 estimate.

Life expectancy at birth was 71.05 years (male: 68.53 years and female: 73.69 years (2010 estimate)

Total dependency ratio was 51.8 % with elderly dependency ratio: 7.9 %

The birth rate was 17.38 births/1,000 population. The death rate was 6.31 deaths/1,000 population and the population growth rate was.0.99% (2013 est.). The rate of urbanization was urban population: 50.7% of total population (2011) rate of urbanization: 2.45% annual rate of change (2010-15 est.)

The major cities and population are: Jakarta (capital) 9.121 million; Surabaya 2.509 million; Bandung 2.412 million; Medan 2.131 million; Semarang 1.296 million (2009).

The infant mortality rate is 26.06 deaths/1,000 live births. The contraception rate is 61.9% (2012). The total fertility rate is 2.2 children born/woman (2013 est.). The life expectancy is 71.9 years favouring women in old age.

Improved drinking water source is improved: urban: 92% of population, rural: 74% of population total: 82% of population

Access to improved sanitation facility in urban areas is 73% of population and in rural areas 39% of population, total being 54% of population.

Out 943% of the people aged 15 and over can read and write (http://en.wikipedia.org/wiki/Demographics_of_Indonesia)
Male: Female ratio in Indonesia is 51.5:51.15. Age-wise 28.87% people belong to 0-14 years, 66.08% to 15-64 years and 5.05% to 65 years and above. Population density is 14,864 in Jakarta, 1,262 in Jawa Barat, 1,161 in Banten, 1,125 in Yogyakarta, 994 in Jawa Tengah, 795 in Jawa Timur and 701 in Bali, while in whole of Indonesia it is only 128. In some of the provinces, e.g., in Papua and Kalimantan it is between 8 and 18 per kilometer. An equitable provision of social services to this vastly diversified population can therefore be a formidable task indeed.

Population growth rate is 1.1% in Indonesia as per a 2011 estimate. The Human Development Index score for Indonesia is 0.629. Gender inequality index-wise Indonesia has a score of 0.494, worst among SEAR and ASEAN countries.

Annexure 2: Socio-economic situation

Thirty million people in Indonesia are below 1.25 USD income level per day and 70 million people are below the level of 2.0 USD per day. Between 2000 and 2011 the GDP in PPP terms increased from USD 2,446 to 4,736. Commercial Profit Tax Rate in per cent reduced from 37.3 in 2005 to 34.5 in 2011. Domestic Credit Provision to private sector and from bank reduced from 60.7 and 19.9 in 2000 to 36.5 and 29.1 in 2010 respectively. Research and Development expenditure’s share to GDP in per cent did not change much, i.e., 0.07% to 0.08% between 2000 and 2009. Number of telephone (fixed/mobile) subscribers per 100 people increased from 2000 to 2010 from 4.8 to 107.5. Technological capability in terms of proportion of high-tech exports in total manufacturing exports, per cent in 2004–2011 was 27.04 to 25.43. Cost of business start-up as percentage of GNI per capita in 2003–2011 reduced by more than 4 times, without any fall in tariff rate. Value of extra-ASEAN inward FDI between 2005–2011 increased by more than double. Human Development Index, 2005–2011 0.696 to 0.728. Schooling years completed in number of years is 5.3 (adult actual) and 11.8 (children expected) 5.8 (adult actual) 13.2 (children expected) for 2005 and 2011 respectively. The adult literacy rate in percentage between 2000–2011 are 88.6 and 94.0% respectively. Proportion of population living in poverty in 2000–2010 are 19.0 and 13.3 (national poverty line). Gini Coefficient between 2000–2011 increased steeply.


The growth of economy did not change much between 2005 and 2012. It increased from 5.50 to 6.23 in percentage terms. Among the unemployed 39.66 percent were high school graduates, 23.48 percent were junior high school graduate, 20.01 percent were graduates from elementary schools. However, diploma and university degree holders were 8.76 percent only.

Distribution of poverty by geography shows that 55.33 percent poor of Indonesia live in Java, and 21.6 percent live in Sumatera. On the other hand, while the rate of illiteracy is 7.2 percent in Indonesia it stands above 10 percent in Kalimantan Barat, Bali, Jawa Timur, Sulawesi Barat, Nusa Tenggara Barat and Papua.
Annexure 3: Health care infrastructure

According to the democratic norms of governance health is a decentralized area and it is the provincial, city or kabupaten authorities which make decisions in matters of health.

The country has 9,599 primary health care centers or Puskesmus under the local government management, with some observation/ emergency beds. This means that at least one Puskesmus exists in each sub-district. Each is staffed by 5 to 60, less being in the remote areas. In total about 90,000 workers work in these Puskesmus in total. Some even are headed by doctors but usually by midwives or paramedics in rural areas. About one fourth of these centers have trained nurses, while about 1,300 are without any doctor. Puskesmus without doctors are visited by a doctor every three to four months. Some Puskesmus in urban areas are visited by ophthalmologists twice every week. Each village has a posyundo. Puskesmus also conducts school based camps and screenings (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).

Standards for services vary by location. Supplies are sent to the health facilities by the MoH through the district health authorities. Of all the 34 provinces only about 10 have tertiary hospitals. Some of these are owned by MoH, some by private agencies and some by the local government. Of the 49 hospitals owned by MoH in future except 10 all others would be devolved by MoH to the local government (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).

Ministry of Health has six/ seven director generals. These are for: disease control, health care resources, maternal and child health, logistics (pharmacy and equipment), research and development, health care financing and secretary general for public relations and health promotion. Director of non-communicable diseases is the focal point for eye care related problems.

Ministry relates to the provincial health authority, while directorate general relates to district health authority and director primary health care to Puskesmus. Primary health care includes maternal and child health care, family planning, health promotion, nutrition, disease control, treatment of minor illnesses and environmental health.

Indonesia is preparing its third/fourth National Strategic Plan for Strengthening Health Care Facilities, focusing on accreditation, logistics and physical facilities (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).

Indonesia has 2,300 hospitals in the public and the private sector. These hospitals have been categorized as A, B, C and D. D being the most basic hospital at district level with <50 beds and A the most advanced at the tertiary level with >400 beds (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).

The provincial governments construct, equip and staff city hospitals city based hospitals. Hospitals are also constructed, established and staffed by the kotamadya or kabupaten governments. In Indonesia hospitals have been divided into four categories.' D' category is
the basic hospital with four types of general services, i.e., surgery, obstetrics, pediatrics and internal medicine. 'B' type hospitals have some specialists and ‘A’ types are the tertiary hospitals. Hospitals are headed by a director.

Public health is managed by ‘Dinas Kesehatan’ or provincial/ city/ kabupaten health department headed by a ‘head of the health department’. City health department usually has 125 to 150 staff. City health departments monitor hospital services and services at ‘puskesmus’ the primary health care centers .It has four specific functions- human resources, health services, disease prevention and control and health facility and insurance management. Reports from the hospitals go to the governor/ mayor or bupati through the respective health departments.

Some puskesmus have indoors and operation theaters. None however, provides eye care surgery. Some puskesmus in Jakarta even have ophthalmologists, where some surgeries are done. Puskesmus provides primary health care services, public health and community empowerment. Services given in Puskesmus in detail are:

- Anamnesis
- Early detection of Cataract, refraction disorders, color blindness in schools and community
- Visual Acuity Test
- Anterior Segment examinations
- Sight Examinations
- Intra Ocular Pressure Test
- Color Blindness Test
- Administration of Vitamin A 2x / year to infants
- First Aids in Eye Emergencies

Number of posyandus, 70,000, are not equitably distributed, understandably because of sparse population density certain provinces, e.g. Papua, Papua Barat, Lampung, Aceh, Sulawesi, Bengkulu, Maluku, Kalimantan, Gorontalo, Jambi, Sumatera, Nusa Tenggara Timor etc.

Presence of general practitioners is widely variable as per the geographical location. While is 36.1 per 100,000 people nationally in Jakarta it is 149.5 and in Papua, Lampung, Kalimantan Barat, Sulawesi Tengah, Sulawesi Tenggara, Nusa Tenggara Barat, Maluku Utara, Maluku, Nusa Tenggara Timur and Sulawesi Barat it falls from 20 to 9. The nurse population ratio is 96.2 per 100,000 people nationally but there is a reverse picture in availability of nurse to that of the presence of general practitioners geographically, except Nusa Tenggara Barat, Lampung, Banten and Jawa, where it falls below 80. But quite a high ratio is seen in Maluku, Papua Barat, Maluku Utara, Sulawesi Tengah, and Sulawesi Utara, where this is above.

210. General practitioners per Puskesmus also varies from 4.67 per Puskesmus in Kepuluan Riau to 0.45 in Papua. Other places where this ratio is low are: Nusa Tenggara Timur, Papua, Sulawesi Tengah where the ratio is close to 1.0 only against the national ratio of approximately 2.0.

Among the 511 kabupatenks and municipalities 183 are health-wise disadvantaged districts. Four land border provinces-Kalbar, Kaltim, NTT and Papua provinces and 12 sea border provinces-Aceh, Riau, Kepri, Sumut, Kalbar, Kaltim, Sulut, Maluku, Maluku Utara, Papua, Papua Barat and NTT are disadvantaged provinces. Besides there are 34 small inhabited outermost islands which are also disadvantaged. There is a policy and strategy to address
the health issues of these population on a priority basis. The strategy for 2010-2014 is to empower the community, improve their access to health care, improve health financing for them, empower health personnel, improve availability of logistics including medicine, improve management including health information system, coordination and surveillance. Among all these capacity building has been given the highest priority. Among disadvantaged districts, remote and isolated areas and borders and islands priority has been given to the disadvantaged districts. In the 183 disadvantaged districts 101 health centers, 45 priority and 50 target districts have been given more focused attention (Health Services Program in Remote Area, Underserved, Border and Outermost Islands (RUBOI). Booklet by Directorate of Basic Health, July 2011)

Indonesia started a National Health Insurance System since January 2014. At present it covers half of the population of the country. It will take up to 2019 to cover the whole country. JKN is the insurance system, which is managed by BPJS, which is under the president’s office.

At present reimbursement of the claims is proving to be a management problem. No firm decision has been taken on the premium and also package of the services that will be provided. A division of the health insurance system shows that 32.37% of the people are covered with National Social Health Insurance ((Jumkesmus), 13.98% are covered with local insurance systems, government employee coverage is 7.29%, while 35.02% are not covered by any form of insurance. About 49.44% and 40.48% of the health care are provided in the government and private hospitals respectively. Public sector health insurance holders cannot go to the private sector for insured services. One problem in getting insurance reimbursement is the requirement of classifying the eye care problem according to the International Classification of Diseases 10 definition, as this does not cover all the various types of eye diseases nor the severity of some of the classified diseases.
Annexure 3: Medical education system

Indonesia has more than 120 public and more than 80 private universities. Of them about 72 have medical faculties but only 12 with ophthalmology department. Most also have department of public health.

Institutional accreditation is offered by the Ministry of Education. Among the universities the following are the four highest ranking universities in Indonesia

1. Faculty of Medicine University of Indonesia
2. Faculty of Medicine Gadjah Mada University, Yogyakarta
3. Faculty of Medicine Airlangga University, Surabaya
4. Faculty of Medicine Padjadjaran University, Bandung

Indonesia gets about 5,000 medical graduates every year but among them only about 100 are eye specialists.

National Education Act and Medical Practice Act control academic and professional aspects of graduation and medical practice respectively. The former is related to the Ministry of Education and the latter to the College of Ophthalmologists and medical council. A student enters a medical college after twelve years of schooling through an entrance examination, conducted by the Ministry of Education. Sixty of the universities in Indonesia have medical faculties. Twelve of these medical faculties have ophthalmic departments. After graduation as a general practitioner, with a degree called M.D., that takes six years including a one year internship in remote areas, a medical graduate gets a bachelor degree. If a bachelor passes an examination arranged by the Indonesian Medical Association then s/he is offered an M.D. degree. A fresh medical graduate may take up residency for four years to be an ophthalmologist. The four years are broken down in four stages or 8 semesters, in any of these 12 ophthalmology departments. The residency will allow a graduate to practice as an ophthalmologist in general. Further specialization (sub-specialization/ super-specialization) may be done through fellowship. The period of this training varies by the different institutions.

Perdami, or the Indonesian Association of Ophthalmologists established a College of Ophthalmology, which conducts a board examination for ophthalmologists, as a pre-requisite for getting registered as an ophthalmologists by the Indonesian Medical Council. However, for managing cases as a private practitioner a certificate needs o be acquired by the aspirants from the Local Government Health Departments.

The College of Ophthalmologists also expects to accredit the teaching institutions. This idea has not largely gained acceptance yet. The College however, has standards set for its examiners who conduct the board examination.

The College also intends to develop standard operating procedures and/or guidelines as means to improve professional competence or professional performance and professional conducts of the ophthalmologists.
Annexure 4: Health status indicators

The infant mortality rate is 19 per thousand live births. The fall was quite precipitous after 2003. However, it was as high as 30 and above in Kalimantan Selatan, Nusa Tenggara Barat, Papua Barat and Maluku Utara. The under five children death rate is 34 per thousand live births but again, in Papua, Nusa Tenggara Barat, Sulawesi Tengah, Sulawesi Barat, Maluku Utara, Gorontalo and Papua Barat it is above 50. The maternal mortality ratio is 220 deaths/100,000 live births (2010), while the MDG target for Indonesia is 102. Life expectancy at birth as per a 2011 estimate is 69.65, which did not change much from 2006. Again the places mentioned above are a slightly disadvantaged position. Children under the age of 5 years suffer from an underweight prevalence of 19.6% as of 2007 (http://en.wikipedia.org/wiki/Demographics_of_Indonesia)

The incidence rate of measles per 100,000 infants may be as high as 9 to 31 in Sulawesi Selatan, Kalimantan Barat, Bengkulu, Kalimantan Timur, Jambi, Sulawesi Tengah, Banten, DKI Jakarta, Kepulauan Riau, Aceh and DI Yogyakarta. The case fatality rate diarrhea has been estimated at 1.45 percent in 2012. Only 23.42% of the target of 80% pneumonia cases could be reached for treatment in 2012. Dengue hemorrhagic fever incidence in 2012 was 7.11 per 100,000 population. Annual Parasite Index for malaria is quite high in central Kalimantan, Eastern part of Sulawesi and Papua. It is in general 1.69 per 1000 population (API). Diabetes mellitus specific death rate is about 4.2% among people aged 15-44 while its prevalence rate among people aged 45 to 54 years is 14.7%.

While 9 ante-natal care visit rate is nationally 90.18% Nusa Tenggara Timur, Papua Berat and Papua show rates as low as 67.67% to 34.48% respectively. Post-natal complication has been rising, while in 2006 it was 44.64% in 2012 it was observed to be 69.15%. National target for vitamin A coverage is 82.82%. But as low as 54.42% to 41.84% coverage is seen in Maluku Utara, Papua Barat and Papua respectively. Measles vaccine coverage rate is 99.3% in Indonesia but less than 80% coverage is noted in Sulawesi Barat, Kalimantan Selatan, Papua and Papua Barat. While the national target of complete immunization was 90% in 2012, half of the provinces did not achieve this target, especially in the provinces that show a lower achievements in other parameters mentioned above.

National target for violence against children was 60% in 2012. In the country as whole this is 71.63% largely because of 100% battering of children in Papua Barat, Maluku, Sulawesi Tenggara, Kalimantan Timur, Kalimantan Selatan, Nusa Tenggara Barat, Bali, Banten, DI Yogyakarta, DKI Jakarta, Kepulauan Bangka Belitung, Sumatera Selatan, and Jambi.

Sanitation coverage is 56.24% in Indonesia. But in Kalimantan Tengah, Nusa Tenggara Timur and Papua it is less than 34.31%. Safe drinking water is available to 41.6% of the people inn Indonesia but the rate is much lower, i.e. lower than 30% in Jawa, Barat, Kalimantan Timur, Kep. Bengka Belitung, Ache, Papua, DKI Jakarta, Kepulaun Riau, Banten.

TB prevalence rate in Indonesia is 281 per 100,000 population according to a 2011 estimate. BCG vaccination rate on the other hand, as of 2012, is 89% among infants. The rate of stunting among infants is 36% (Bakti Husada. Kementerian Kesehatan Republic Indonesia. Profil Kesehatan Indonesia 2012 4.2% of the deaths are caused by diabetes among the population aged between 15 to 44 years. Among the city population 14.7% die from diabetes.
in the age group of 45 to 54 years. In the rural areas this rate is 5.8% only (MoH, Indonesia, 2012)

A very high degree of risk has been seen for food or waterborne diseases: bacterial diarrhea, hepatitis A, and typhoid fever; vector borne diseases: dengue fever and malaria. Highly pathogenic H5N1 avian influenza has been identified in this country.

Health expenditure is 2.7% of the GDP (2011). Physician density in the country 0.204 per 1,000 population (2012), hospital bed ratio is 0.6 per 1,000 population (2010) and obesity among adults is 4.8% (2008).

http://www.indexmundi.com/indonesia/demographics_profile.html

Annexure 5: Eye health situation

According to latest global estimates more than 161 million people were visually impaired, of whom 124 million had low vision and 37 million were blind. ‘Vision 2020 – the Right to Sight’, was launched in 1999 as a partnership between WHO and the International Agency for the Prevention of Blindness (IAPB) to eliminate causes of avoidable blindness by the year 2020 and to halt and reverse the projected doubling of avoidable visual impairment in the world between 1990 and 2020. There is a need for intensified action if its aim is to be achieved. WHO in 2005, through WHA 59.25 in the World Health Assembly adopted a resolution entitled ‘Prevention of avoidable blindness and visual impairment’ to address this urgency. To this end the present government adopted a national strategy for eye care services, with five objectives, signed by the Minister of MoH in 2004-2005 on the top of and the Vision 2020 strategy. A National Prevention of Blindness Committee was formed but became obsolete. The Visions 2020 activities are also stalled. Eye health is yet to be a priority in the health sector of Indonesia. The five objectives of the strategy are as follows:

OBJECTIVE1: strengthen advocacy to increase strengthen advocacy to increase member states political, financial and technical commitment in order to eliminate avoidable blindness and visual impairment

OBJECTIVE 2. develop and strengthen national policies, plans and programmes for eye health and prevention of blindness and visual impairment

OBJECTIVE 3. increase and expand research for the prevention of blindness and visual impairment

OBJECTIVE 4. improve coordination between partnerships and stakeholders at national and international levels for the prevention of blindness and visual impairment

OBJECTIVE 5. monitor progress in elimination of avoidable blindness at national, regional and global levels

Eye care infrastructure

Eye care is given in ‘A’ and ‘B’ types hospitals only. In Jakarta ‘C’ category of hospitals also provide eye care. Besides, there are nine community eye care centers or BKMM in big cities. Each province has some ophthalmologists (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).
Out of more than 200 universities, 72 have medical faculties in Indonesia. Of these only 12 have eye departments where post graduate eye care specific trainings are given. These departments also provide eye care related services. There are five eye care hospitals in the private sector also in Indonesia.

Out of 12 medical institutes four have department of community ophthalmology department, i.e., Cicendo, RSCM, Makassar and Perdung. While Cicendo arguably, is the best in this regard in the country.

There are mobile eye health programs conducted through some mobile health centers, which are headed by doctors and sometimes by ophthalmologists. These programs are managed by the local governments. The frequency of these programs varies based on local conditions and weather, It is costly to run in remote areas (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care).

Although health insurance covers eye diseases the amount allocated for eye glasses is only Rp. 15,000, while on average a pair of glass costs Rp. 25,000; so the patients usually buy glasses from out of pocket money. This happens also because glasses need to be bought from identified shops and travelling to those shops also costs considerable amount of money.

There are several private eye hospitals in Indonesia, e.g.,

- Jakarta Eye Center
- Lipo Group-university, PHC centers
- Clinic Matara Centera
- AINI
- Dr Yap in Yogyakarta
- Bandung Eye Center
- Undaaan in Surabaya
- Umbon
- Orbita and Selebes in Makasar

**Prevalence of eye diseases**

A survey conducted in 2007 by the MoH titled the Basic Health Research found a low rates of eye problems in Indonesia, e.g.,

- Blindness was found to be 0.9 % (based on Visual Acuity < 3/60)
- Low Vision was found to be 4.8 %
- Disease specific prevalence rates found were: Cataract : 1.8 %, Glaucoma : 0.5 %, Color Blindness:0.7 %, Refractive Disorder among school aged children: 32% (81.9% not corrected with glasses); among young adults: 45.1% (80.2% not corrected with glass)
- Cause of childhood blindness found at School for The Blinds in Java (2007) were as follows: hereditary disease: 31.9%; intrauterine causes: 1.5%; peri-natal/ neonatal causes: 5.4%; postnatal / infancy / childhood causes: 28.5%; unknown causes: 32.7%.
Among these 33.3% was avoidable and 26.6% preventable/treatable.

Eye and Ear National Health Survey conducted in 1993-1996 by MoH found the following: Prevalence of Blindness (VA ≤ 3/60) 1.5%, cataract (0.78%), glaucoma (0.2%) and refractive disorders (0.14%). This study found the untreated cataract rate as 52%, glaucoma 13.30% and refractive error as 9.0% as the cause of blindness.

A RACCS surveys conducted in 2005 on the other hand, found the blindness prevalence rate to be as high as 6.31% in Kalimantan, 4.03% in Lombok and 1.5% in Jakarta (Perdami).

Survey findings conducted by MoH in 2013 (National Health Survey-RISKESDAS) found the prevalence of blindness as 0.90%. The main reason of this low level of blindness is because of a high denominator, as all ages above 6 years were involved in the study. Other surveys conducted in 2013 among 2.303.111 people, in three districts of South Sulawesi by Perdami among the population aged 50 years and above found as follows:

### Visual acuity

<table>
<thead>
<tr>
<th>Blinding (best corrected VA&lt;3/60 in the better eye, with best correction or pin-hole)</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness: presenting VA&lt;3/60 in the better eye, with available correction</td>
<td>2.7%</td>
</tr>
<tr>
<td>Severe visual impairment: presenting VA,6/60-3/60 in the better, with available correction</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

* rates increase with advancing age precipitously.

Main causes of blindness with presenting VA<3/60 in better eye with available correction, no pin-hole were as follows (N=603) according to the South Sulawesi survey are as follows:

<table>
<thead>
<tr>
<th>Causes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated cataract</td>
<td>64.3</td>
</tr>
<tr>
<td>Non-trachomatous corneal opacity</td>
<td>10.8</td>
</tr>
<tr>
<td>Other posterior segment diseases</td>
<td>7.1</td>
</tr>
<tr>
<td>Cataract surgical complications</td>
<td>4.1</td>
</tr>
</tbody>
</table>
85% of all blindness in Indonesia is in people aged 50 and above and nearly all cataracts in people >50 aged people

While 52% of the blindness in Indonesia is caused by cataract the cataract surgical rate itself is quite low, as may be seen below. This estimate is rather on the higher side since the figures include those from mass campaigns also.

_Cataract surgeries conducted in Indonesia_

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>6989</td>
</tr>
<tr>
<td>2010</td>
<td>8302</td>
</tr>
<tr>
<td>2011</td>
<td>13245</td>
</tr>
<tr>
<td>2012</td>
<td>20294</td>
</tr>
<tr>
<td>2013</td>
<td>15243</td>
</tr>
</tbody>
</table>
Between 2003-2010

*Mass cataract surgeries by IOA* = 39.886

Between 2010 and 2014

Mass cataract surgeries by Indo Oph Assoc (IOA) and non-IOA = 93,118

Cataract surgeries by private and public hospitals, clinics = 69,006

Total = 1,622,124

Yearly rate = 324,425

Cataract surgery rate per million/year = 1,352

*Another estimate on cataract operation is given below*

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Cataract Eradication Program</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Social Service Program</td>
<td>Institutional services</td>
</tr>
<tr>
<td>2003</td>
<td>10.106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>5.741</td>
<td></td>
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</tr>
<tr>
<td>2005</td>
<td>3.818</td>
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<td>3.674</td>
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<td>28.371</td>
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<td>2008</td>
<td>5.438</td>
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<td>44.169</td>
</tr>
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<td>2009</td>
<td>7.414</td>
<td></td>
<td>49.800</td>
</tr>
<tr>
<td>2010</td>
<td>8.331</td>
<td>7.090</td>
<td>35.250</td>
</tr>
<tr>
<td>2011</td>
<td>14.344</td>
<td>41.700</td>
<td>37.901</td>
</tr>
<tr>
<td>2013</td>
<td>15.231</td>
<td>3.689</td>
<td>25.203</td>
</tr>
<tr>
<td>2014</td>
<td>1.277</td>
<td>403</td>
<td></td>
</tr>
<tr>
<td>2010-2014</td>
<td>59049</td>
<td>65280</td>
<td>225374</td>
</tr>
</tbody>
</table>

* The fall in the number of surgeries is commensurate to the number of ophthalmologists involved.
Continuous professional education development data report about 40,000 surgeries by 300 ophthalmologists in five years. The number of surgeries conducted by Perdami members is 52,000 in five years. Task is 1/1,000 population of 240,000 million population, i.e., 230,000 per year. Targets to be achieved therefore 170,000+backlog.

The barriers to cataract surgery are: need not felt (47%), fear (29%), cost (12%), unaware that cataract is treatable (6%) and others are like cannot access treatment, treatment denied by provider, local reason.

There are several interest groups which work in the area of eye care in Indonesia and these are: Cataract and refractive surgery, vitreo-retina, glaucoma, immunological infection, PO and strabismus, oncology and reconstruction, refraction and contact lens, neuro-ophthalmology and community ophthalmology.

Some of the ophthalmologists conduct even 50 cataract operations per day. Quality is a problem in cataract surgery as no post-operative follow up is usually done.

One of the reasons why CSR is low despite all efforts taken by the stakeholders is the maldistribution of the available human resources as shown below (Figure 4).
One big problem is the fact that MIS in Indonesia does not cover eye care problems or services, which shows the low priority accorded to eye care in the country (Dr. Chute Putre Triani, Deputy Director, Directorate of Referral Care, Directorate General of Health Care Facility and Dr. Kartini Rustandi, Director of Basic Health Care). The other is that according to a government policy cataract operations will no more be done in puskesmuses but in higher level health facilities. Also, availability of health insurance encourages the patients to obtain eye care directly from hospitals, in many of which, in particular in BKMMs and pukesmuses production of national identity cards even enable the incumbent to get free services.
Annexure 6: Reports based on site visits

Findings from Surabaya

Surabaya is the capital of East Java province, which has East Java has 9 kotamadya and 29 kabupatens. Dr Soetomo Hospital, Surabaya is a provincial hospital under the Airlangga University. There are 10 sub-specialties including pediatric ophthalmology and community ophthalmology. There are 91 residents and 32 faculty members. Each of the divisions has a professor and three to four sub-specialists, except in oncology.

The department publishes a healthy number of papers each year. One was on retina and seven on epidemiological aspects of eye health. Two other papers were also published. In 2013 four papers were published. The school is also attached with the Journal Ophthalmology of Indonesia, two editions of which are brought out every year since 2009.

Surabaya Ophthalmic Association has two separate entities. There are in fact 27 regional associations of IOA. East Java has six of the forty pediatric ophthalmologists in Indonesia. It also has ten retinal specialists out of forty in the country. It has three faculty members who specialize in community ophthalmology.

The Surabaya eye hospital outdoor runs for days a week for specialized services. On these two days the outdoor sees 15 to 20 patients per day and on other days the daily number is five. Case by case one patient with strabismus is seen per week, two to three cataract cases per week, one to two glaucoma cases per month, one to two retinoblastoma per week, which is quite high in Indonesia.

Mass cataract output was 1,009 in 2011. In 2012 it was 235. Post cataract surgery follow up visits are made on day one, one week and one month after the operation. Obligation is hundred percent. But in mass cataract surgery only one follow up is done, one day after the operation. Complications later on are first managed by the local eye care related health staff and referred if necessary. The number of referral is negligible. Cataract backlog is seen more among the females.

IOA, through its collaboration with the Association of Optics Shops provides 1,000 pairs of glasses free to the patients.

Eye care services are given through two approaches-basic and community level. While basic care is passive, community level interventions are done through elementary schools, posyandu and puskesmus. The community based care is given through residents once a week. Two services are covered through community approach- refraction and cataract.

Puskesmus in Surabaya

The puskesmus are owned by provincial governments. The puskesmus visited is situation in Gayungan sub-district. It is headed by Dr. Ary. The puskesmus are usually situated in local neighbourhood and different puskesmus have different physical structure. Surabaya city itself has 50 puskesmus, of which six have eye units.

The puskesmus serves 14,000 people and has five general practitioners (GP), four dentists, one psychologist (who also attends another puskesmus), eight nurses and nine midwives, two pharmacists. Including all the total staff number is 46. There are two pustos under the
puskesmus. One GP attends each pusto every day with a team. The other team members are one dentist, one midwife, one nurse, one pharmacist. There are 36 posyandos under the puskesmus.

The puskesmus gets 100-200 patients a day, 20 of who would be with eye problems but once a week.

Surabaya has 12 puskesmus which have indoor and operation theatre but none is used for eye surgery. City government has expressed its desire to get eye residents into these puskesmus.

*Interview with Dr. Dodo Anondo, Director of Dr. Soetomo Hospital*

The hospital is owned by the provincial government. Only about 20% support comes from MoH. Residents of this hospital also go to some other networked hospitals, which takes about 2.30 hours at times to reach. Some of these hospitals have ophthalmic units. Some of these hospitals are district level hospitals while some private sector hospitals. This is a matter of mutual benefit. While residents are learning the hospitals get free services from the residents.

The hospital has 1,500 beds, while the eye department has 39 beds. There is another provincial government hospital in South Sulawesi. It is called Malang Hospital and has 800 beds. It is also an ‘A’ type hospital. Usually types ‘A’ and ‘B’ hospitals are run by the provincial government.

The hospital has 30 departments, 5,500 staff, 350 specialists, 200 residents, 39 eye specialists, 50 generalists, 1,125 nurses (10% to 20% are above graduate level). Of the total number of nurse 20 work in the eye indoor, 10 in the outdoor and 5 in the operation theatre. There are 30 technicians also for the eye department in the hospital. Per day about 200 patients report to the outdoor. It works five days a week.

The hospital has twenty two operation theatres of which two operation theatres are for eye surgery. In general more than 15,000 operations are done on a yearly basis and each day about 25-30 eye operations are done in the hospital for eye problems.

The hospital has a budget of about 100 billion Rp. of which 25% comes from provincial government and 75% from the patients. Recycling of revenue is done.

Any partnering with the hospital has to be signed by the director of the hospital which he will get approved by the provincial government. The director reports to the governor of the province through the provincial chief of the health department.

According to the director of the hospital tuberculosis is the number two disease in the country and leprosy the third most common disease.

In East Java there are 60 provincial and district hospitals but the number will run to 300 if the private hospitals are also included. Of the five provincial hospitals two are of ‘A’ type, two are ‘B’ type and one is ‘C’ type. Among these five are private eye hospitals. Among these one is the Udaang, which has 10 ophthalmologists and conducts about 20 operations per day.
The hospital has been accredited by the National Accreditation Board. This also includes the Eye department. There are four public sector hospital which have also received JCI accreditation. These are: CIPTO, Sangla. Sachito, and Kariatus.

*Talk with Evylene Omrati, chief of education program, eye department*

The residency program has eight semesters which are as follows:

Semester 1: Basic MKDU. This stage does not allow a resident any independent exercise;

Semester 2-4: early Muda;

Semester 5-6: Intermediate stage (Madya);

Semester 7-8: Advance or Mandiri, when the residents can conduct operations independently.

Of the total 91 residents 6 are in stage 1, 25 in stage 2, 29 in stage 3 and 31 in stage 4.

The advance learning has been divided into nine divisions and each resident has to spend three months in each.

On a yearly basis about 10-12 residents graduate successfully. The others cannot satisfy conditions, e.g., 60 independent cataract operations, research etc.

The Airlingga Hospital does not have any sub-specialty training program. Only Cicendo Hospital and RSCM have sub-specialty training. Sub-specialty courses are administered for various duration, e.g., for retina it is for 12-18 months, for pediatric ophthalmology it is again for 12-18 months. For glaucoma and refraction it is for six months. Sub-specialty is also arranged for oncology and oculooplasty. However, every sub-specialty is administered for six months in RSCM. Number of examiners in the national board is increasing in the National Board from Surabaya.

*BKMM (Balai Kesehatan Mata Masyanakat) Surabaya*

This is the biggest BKMM in Indonesia. It runs a program called East Java Community Eye Program.

East Java province has a population of 37,476,757, of who 12.73% are poor. The province has 38 districts and cities and 959 puskesmus. The ratio of ophthalmologists to population is 26 to one million. The ratio for refractionists is 15 to one million.

The BKMM collaborates with CBM, HKI and Lions Club.

There are five ophthalmologists in the BKMM, one of who is a pediatric ophthalmologist, who got fellowship for twelve months. She went to the FEH for one day only as an observer. Out of thirty nurses one is trained on pediatric ophthalmology. Out of four refractionists one has been trained on pediatric refraction. The BKMM has a distinct pediatric section with toys in the waiting room but it has a plan for some redesigning. But as there is no anesthetist available, no pediatric surgery is done. An anesthetist will be recruited this year. Laser operations are also not done because of the non-availability of the anesthetist. One technician looks after the maintenance and repair of the equipment.
Technical staff from the BKMM go to 38 city and district health centers (puskesmus) once a week. Support is given for six districts through an MoU between HKI and government. Mass cataract programs have been reduced to 1 from 38 due to government quality assurance rule and also due to coverage by health insurance.

The BKMM has four operation theatres (OT) with two beds in each but only two rooms are used routinely. One is used for infectious cases. OT timing is 10 AM to 2 PM. About 30 to 40 cataract surgeries are done in the two OTs by three ophthalmologists per day. OTs are however, used four days a week. About 15 to 20 minor operations are done in the poly clinic of BKMM. About 5 to 7 DR cases are seen per day in the outdoor. But the total number of patients seen in the outdoor is about 200, of them 20 to 40 are children during school vacation or 10 to 20 other-wise. The total number of operations conducted in the BKMM is about 5,000. The number of patients is increasing steeply year to year.

Before the community eye program nurses and midwives of the relevant puskesmus are trained for two days. Number of cataract surgeries conducted through outreach services are as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3,000</td>
</tr>
<tr>
<td>2013</td>
<td>700</td>
</tr>
<tr>
<td>2014</td>
<td>644</td>
</tr>
</tbody>
</table>

Most of the cases seen in the BKMM are: cataract, glaucoma, myopia, pterygium and astigmatism.

The BKMM has 10 VIP beds and 40 beds in general wards but none for children specifically. It has 9 ICU beds, three of which are for neonates. There is a nursing room for examining every indoor patient every day.

Seventy five percent of the BKMM financing comes from social health insurance, 15% from partner INGOs, e.g. CBM, which is providing consumables since 2007 and so far has given consumables for 4,000 patients. It will provide consumables for 300 patients in 2014 and 200 in 2015. CBM however, decided that it will, instead of supporting surgery provide training. HKI provided some pediatric equipment through the ‘Seeing is Believing’ project.

Patients not covered with insurance pay 50% of the cost out of pocket. This means Rp. 18 hundred thousand per cataract operation. There is no budget for low vision services in the BKMM. Screening program in 500 elementary schools is supported by HKI. It also supports training for nurses in puskesmus. RoP service has been planned for two hospitals once a week. Money recovered is used for training, maintenance and supplies.

The laboratory of the BKMM has no gram staining facility.

Eye glasses are made in the BKMM.

A pilot study is being done for prevalence of different eye care problems.

The BKMM reports to the provincial health department.
The BKMM wants to get specialization training on vitreo-retina, glaucoma, refractive surgery, external eye diseases, and oculoplasty sub-specialty. It also would appreciate orthoptist training.

**Findings from Makassar**

University of Hasanuddin Eye Department

Dr Habiba S Mohidin, is the Head of Institution /Department (KVR). The department has experts in the areas of infection control and immunology, lens and cataract (2), paediatric ophthalmologist (2), general ophthalmologist (8) oncology, plastic and reconstruction ophthalmologist (2), vitreo-retina ophthalmologist (3), neuro-ophthalmologist (21), low vision (2), cornea (1) and cataract and refractive surgery (1).

The department has the following units: lens and cataract, vitreoretina, glaucoma, tumor and reconstruction, external eye disease, refraction and contact lens, neuro-ophthalmology, pediatric ophthalmology and strabismus and community ophthalmology.


4 years residency is broken into 8 semesters, as follows:

1st sem: stage 1: basic fundamental (anatomy and physiology)

2nd sem: bio-statistics (combine degree)

3rd sem: rotation sub division, literature review

4th sem: rotation sub division, research proposal, case report

5th sem: rotation sub division

6th sem: national exam

7th sem: result study presentation

8th Sem: Independent stage at district hospital

Surgical skill development includes: mastering theory, surgical practice using goat/pig eyes (wet lab), eyelid and orbital surgeries, pterygium and conjunctiva anomalies, strabismus, trabeculectomy, eyeball extraction, cataract surgeries: - ECCE, SICS and Phaco-emulsification.

The university has Dept of Opth, under faculty of medicine. With 26 members in the eye dept. Vitreo-retinal section, infection and immunology, community ophthalmology, cataract, pediatric ophthalmology 2, glaucoma, oncology, general ophthalmology, neuro
ophthalmology, low vision, cornea and refractive surgery, tumor and reconstruction, external eye diseases, pediatric and strabismus.

Research grants available fro MoH for genetics, DR and gene related macular degeneration. Research grant was also obtained from MoEd. International presentations were made in Japan and Hong Kong.

Continuous education takes place three times a week. Skill development, research and community based activities are required for completing residency. There are 19 collaborative hospitals, including BKMM and Puskesmus. Some are private sector hospitals, e.g., including JEC.

ECCE, SICS and phaco techniques are used for training on cataract.

NGOs collaborated with are: SPBK: Perdammi, CBM, Mata Hati, Mandiri Bank, SIDOMUNCUL; Lions, HKI, FHF, ORBIS, ICO, IKM Unhas. SUMBA EYE CAMP/ RACS

There is an e-library system beside a hardcopy library.

Dr Habiba is also the head of IOA in S Sulawesi.

The most common eye problems seen in BKMM are:

<table>
<thead>
<tr>
<th>DISEASE</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATARACT</td>
<td>2565</td>
<td>1678</td>
<td>2254</td>
</tr>
<tr>
<td>PTERYGIUM</td>
<td>390</td>
<td>427</td>
<td>624</td>
</tr>
<tr>
<td>KONJUNCTIVITIS</td>
<td>620</td>
<td>739</td>
<td>523</td>
</tr>
<tr>
<td>GLAUCOMA</td>
<td>405</td>
<td>238</td>
<td>408</td>
</tr>
<tr>
<td>KERATITIS</td>
<td>213</td>
<td>168</td>
<td>129</td>
</tr>
<tr>
<td>MYOPIA</td>
<td>135</td>
<td>209</td>
<td>128</td>
</tr>
<tr>
<td>PRESBIOPIA</td>
<td>234</td>
<td>829</td>
<td>422</td>
</tr>
<tr>
<td>HYPERMETROP/ PRESBYOPIA</td>
<td>84</td>
<td>371</td>
<td>179</td>
</tr>
</tbody>
</table>

Surgical cases managed at the same time are:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VR</td>
<td>33</td>
<td>55</td>
<td>245</td>
<td>189</td>
</tr>
<tr>
<td>EED</td>
<td>32</td>
<td>15</td>
<td>143</td>
<td>188</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>1</td>
<td>4</td>
<td>43</td>
<td>28</td>
</tr>
<tr>
<td>Tumor</td>
<td>70</td>
<td>54</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>
Reconstruction  |  55  |  30  |
--- | --- | --- |
PO  |  31  |  29  |
cataract  |  291  |  178  |  1117  |  1328  |

The total cases of neural origin did not show any variation between 2007 and 2008 about 16-18 per year. More cases of refractive error was seen though in 2007 then 2008. The retinal and glaucoma cases also showed a similar trend.

Total blind in 2010: 3,670,000 is the highest number of blinds in Asia (Dr, Habibah S. Muhiddin). Indonesia needs 4,000 ophthalmologists but it has 1,800 by 2013. In some of the areas, e.g., Papua Barat, Maluku Utara, Maluku, Gorontalo, Tenggara, Sulawesi Tenggara, NTB and NTT the numbers of ophthalmologists are as low as 0 (Sulawesi Barat) to 8 (NTB); Papua and Tenggara have only one each.

Plans to open secondary eye services centers- Palopo, Sulawaesi Tengah and Bentaeng. But these centers are not complete. One needs ophthalmologists and all need some equipment.

Priority: cataract, DR, refractive error especially in children. 25 GPs from Puskesmus trained and equipment provided to them.

According to a survey conducted in 2013, by the University of Hasanuddin in Makasser, South Sulawesi, the blindness rate among >50 years of age was found to be 2.6% (both eyes) to 6% in any one eye at a vision of <3/60 in the better eye with correction. The rate of myopia was found to be 11.42%, hypermetropia 0.9%, astigmatism 6.75%, anisometropia 1.96, and isomeropia 17.1% (Prof. Feni, School of Public Health, South Sulawesi)

Community cataract program shows a very high rate of congenital cataract. Now 3-5 such cases are found very week (20 in 2012 and 53 in 2013)

Consumables by CBM 150/ year cataract surgery. Lions Club for HRD.

Posyandu checks babies once a month. A system needs to be developed so that patients may be referred from there.

FHF had a problem so collaboration with it is held back. Eye center in Kopang and Ambon were expected to be opened with FHF support but could not go far. FHF instead went to NTT.

HKI developed proposals for WHO and IAPB.

736 mass cataract surgeries conducted in 2013 through Perdami in outreach sites- in district hospitals. This number include 280 cases done in East Java and about 150 in Malang. Pediatric surgery conducted in Hasanuddin in 2013 was 53. Mass cataract surgeries are done with support from central Perdami and local philanthropists and organizations.

HKI collected information about the presence of ophthalmologists by district.

ICO will provide fellowships for human resource development. HRD. Training for nurses and technicians-optometrist. The plan did not take shape yet.
CSR: 1,300/ million population. By RACCS survey against a need of 3,000/ million population. So the plan is to increase it to 2,000/million population.

BKMM operates 20-25 per day by phaco and OPD patients are 200-300 per day. Residents from the university also come to the BKMM for completing their residency requirements.

Information obtained from the Dean’s office are as follows: there are 1,400 undergraduate students and interns in the medical faculty. The course curriculum is developed following the SPICES method. The medical faculty also has 1,800 residents including 91 in the eye department. A graduate gets a bachelor’s degree, an M.D. and a residency certificate from the President, Rector and Dean of the university, according to the merit of the case. There are three stages of examination held for residents, i.e., hand on training, video based skill development and OSCE based learning. The last two certificates are conditional to clearance of the Medical Association and Indonesian College of Ophthalmologists, largely managed by Perdami. It is only the Ministry of Education which is valid agency for giving certificate of fellowship. The present fellowship programs are un-standardized.

Academic courses for nurses run for four years. It is followed by a professional training course for one year. Medical technicians are trained under ‘vocational training programs’ administered by the ‘Faculty of Vocational Training’. Technical training in the Airlangga University is available in four to five disciplines. Diploma in refraction is a course for three years, which is under the Ministry of Health. The diploma is also given by private institutions. In Surabaya the teachers of Airlangga University teach there. Anesthetists can take up further sub-specialization in this university in pediatric anesthesia.

The university has been accredited by the ASEAN University Networking.

BKMM in West Java and South Sulawesi are owned by the Ministry of Health. BKMM are tertiary hospitals and used for training. BKMM works in collaboration with the University. Charity program. BKMM will cover 1,000 patients in 2014, of which 300 were already done. BKMM sometimes also gets support from local govt,-transportation and accommodation.

Plan of outreach activities are carried out by Perdami- once every two weeks in remote areas. Other provinces are covered and will also be covered. Outreach activities to Maluku and Sumbar are held 3-5 times per year. Usually 25 camps are held per year. 40 eye surgeries are held in each camp of 200-300 patients. Surgery and screening is also done in district hospitals. Support comes from CBM-consumable- <150 eyes. From Mata Hati there is no limit of support. No casualties are observed after operation.

School site tests are also conducted by Perdami in collaboration with the Eye Department. Amblyopia and Refractive error tests, 20 schools in 3 months. Two residents do the work.

Two ped ophth work. 56 residents work and two each in the ped oph dept. Training for the opth was for 10 months. The other one trained for 9 months. Both were trained abroad also. ROP screening is only held in this university hospital and in another nearby hospital-Wahidi; On average 10 babies in a week (ROP) in both together, Strabismuc less than five cases in one year.
Training for GPs during annual meeting of the university. Supported by Lions. 8 from 8 Puskesmus, 16 volunteers, 16 nurses (8X2) and 50 school teachers of elementary schools. They come from 3 districts.

Of 23 districts and 11 have ophthalmologists. Secondary centers are opened only when there is an ophthalmologists. Right now there are two secondary centers.

Local process takes 6 months and national processing takes 6 months for FEH. Benefit: medical students are used as translators, this increases their skill and also learn more about eyes.

Sub-specialty only in phaco for 3 month. Plan is there for DR.

Hasanuddin University is under Ministry of Education and Wahidi Hospital is under MoH. None is under Provincial Government.

FEH helps in bringing in influential people together and helps in awareness building. Newspapers also flash news items which also helps. Two weeks training from the FEH is also a motivating factor for young professionals. But two weeks are not enough as a training for skill development primarily. But the FEH budget is high which may be used for training 20 ophthalmologists. Workshop for anesthesia and technicians were also held. QA symposium was attended by 150. QA system is in the process of development.

Ministry of Health staff work in Wahidin Hospitals and also in the Hasauddin University and vice-versa.

Wahidin has 700 beds and Hasanuddin has 300 beds. 20 beds in each place for eye care. 100-120 patients are seen in the OPD of eye care in both these hospitals. Private patients 10-15 a day.

Hospital based training was held for nurses- one week for two batches. 30 were trained. 20 physicians. QA SYMOISUM was for 3 days and was attended by 150. 80 nurses participated in nursing symposium. Wet labs were organized for two week-FICS and Phaco. Two volunteers came from India as trainers for wet lab.

No Orbis fellowship was ever obtained from Makassar. Cyber site cannot be opened in Makassar.

Partners: CBM, it gives consumable for cataract surgery (150 eyes/year), Lions Club International Foundation (assists in human resources development), Helen Keller Indonesia, International Council of Ophthalmology, RACS (since 2012).

Partnership was forged for vitreoretina, pediatric ophthalmology and cataract with Dundee, Scotland; JEC, Jakarta-Indonesia; Cicendo, Bandung-Indonesia; Onomichi University, Japan; and PICO, Pakistan and later with Aravind (India); Vasavada Institute (India); and Toyama University; Japan.

Planning for Mid Level Ophthalmic Person, e.g., general ophthalmic nurse, refractionists, optometrist and ophthalmic technician,. Besides the eye department of the Hasanuddin University also plans to hold 2 to 3 workshop/ year, hold East Indonesia Regional Symposium, host FEH (ORBIS) in 2016 and organize Annual Perdami Meeting in 2016.
The University hospital has five nurses in the outdoor (one works as a refractionist), six in the operation theatre and 15 in the indoor but none trained in eye care. The outdoor sees 30-50 patients a day and operates on 3 to 5 cataract eyes. There are two operation rooms each in the University and the Wahidin hospital with one table in each. No LASIK is done in any of the hospitals. There is one private eye hospital in Makassar- the Selebes Eye Center or Clinic Mata Orbita. It has 18 ophthalmologists, many of who are from the eye departments of the University and the Hospital. The hospital conducts 150-200 cataract surgeries per million population. It had performed 1,100 cataract operations in 2013. The hospital charges four to seven million Rupiah per cataract surgery

What is required is development of a system like in Aravind which will be beyond clinical services, e.g., management.

Talk is going on with RACS of Australia. The University is going to open a Community Ophthalmic Nursing course soon. The Public Health Department of the University wishes to open a Management Course on Prevention of Blindness. The head of the department of Public Health (Prof. Feni) and of the eye department (Dr. Habibah) attended a two week course on Community Ophthalmology in Aravind Hospital in India. A Working Group was formed in Makassar for Blindness Prevention after attending the seminar in Aravind. RAAB in South Sulawesi was conducted by this Working Group.

Training was given in the Hasanuddin University on vitreo-retina, pediatric ophthalmology, refraction, EED and tumor reconstruction and at BKMM on glaucoma, cataract, vitreo-retina and refraction to the general practitioners working in some of the Puskesmus in the province.

One ophthalmologist of Hasanuddin University is getting training in low vision through the support of CBM and Ninewells Hospital. Fellowship will be done in the LV Prashad Institute in 2015.

Three staff were trained in L.V Prasad Institute, India on high volume cataract surgery, low vision and refraction and one was training on pediatric ophthalmology in LV Prasad Institute and in Dundee Medical School, Scotland.

RAAB: 2013 was conducted in NTT, South Java and S Sulawesi provinces and conducted over a period of three months.

Prevalence and causes of blindness in 3 districts of S Sulawesi: 2.7%. Causes of blindness was: untreated cataract 64.3% non-trachomatous corneal scarring 10.8%, posterior segment diseases 7.1%, refractive error 5%, cataract surgical complication 4.1%, glaucoma 2.5% and diabetic retinopathy 2.2%.

Cataract surgical coverage 63.9% 49.3% and 27.1% for VA <3/60, <6.60 and <6/18 respectively.

Need not felt, fear, cost treatment, service denied by providers, cannot access treatment etc are the main causes of a low CSR and blindness.

The prevalence of severe and moderate VI were 3,5% and 14.0%, lower in Makassar compared to Gowa and Palopo/Luwu. The two main causes of SVI were untreated cataract (54.5%) and Refractive errors (36.6%). The other causes were: non-trachomatous corneal opacity, 3.0%, other posterior segment diseases, 3.5% and diabetic retinopathy 1.7%.
Approximately 1 in 5 participants had some form of vision impairment

20.4% could not see after operation. Mostly due to non-IOL operation (77.8%). Those who can see after operation at 6/18 level is 61.1% of who 64.5% are after IOL and 11.1% after non IOL operations. Follow up visits are done: 1 day, 3 day, 1 week, 2 week, 3 week and 4 week is the maximum.

There are five nurses in Hasanuddin University Department of Ophthalmology who work in the outdoor, six in the operation theatre and 15 in the indoor. They are not specifically trained on eye care though. One of the outdoor nurses works as a refractionist. About 30 to 50 patients are seen in the outdoor daily and 3 to five operations are done daily. There are four operation tables in four rooms, two each in the University and the Wahidin Hospital.

**Makassar Puskesmus**

Dr Eni Sumoto is the head of the Puskesmus.

One resident from the University of Hasanuddin Eye Department comes twice a week to the Puskesmus. The Puskesmus has 54 staff. In addition there are 21 staff who are on contract. The technical and professional staff are as the following:

Physician: 4, nurse and midwife: 38, laboratory technician: 2, dental technician: 3.

The hospital has a 34 bed indoor including 2 beds for HIV/ AIDS cases. In Indonesia about 40% of the Puskesmus has indoors of varying capacity.

The outpatient department gets 200 patients per day.

A team of one general practitioner, one nurse, one midwife, and one vaccinator goes every day to at least one posyandu or pusto. Under the Puskesmus there are 5 kelorehans with 19 posyandu and two pustos. Each posyandu has five volunteers, called cadres, who are low paid staff with three days training. A pusto has a permanent midwife who resides in the pusto. One paramedic and a midwife visits the pusto once week. Pustos are established in remote areas and smaller islands.

In puskesmus 10-15 eye patients are seen on the day the resident visits it. Puskesmus are owned by city government, while HIV/AIDS and TB patients are supported by the MoH.

At the puskesmus all the patients of OPD or IPD get free service by producing national identity card. Medicine is adequate. The laboratory does basic pathological tests. No x-ray is done but when people get x-rayed outside they are reimbursed the cost. The puskesmus also has two ambulances.

Makasser has 47 puskesmus.

**BKMM, Makassar**

Dr. Noor Syamsu is the director of the BKMM, Makassar. The visited BKMM is one of the two which are owned by the MoH. It has three refractionists, who were trained for three years each in Surabaya and Jakarta. There is no training available in Makassar for refractionists. It also has seven ophthalmologists, three are consultants among them. These are in the areas of: pediatric ophthalmology, cataract surgery and glaucoma. Three general
practitioners also work in the BKMM. Two did fellowships in low vision and retina among the four general ophthalmologists. One consultant studied in Aravind for three months and for six months in Cicendo. There are 27 nurses. It does not have any indoor at present but plans to have so after two years, when there new five story building is ready. It also has four public health professionals (MPH) and two bachelors for supporting community outreach programs. The BKMM has three pharmacists and two electro-medical technicians.

BKMM, Makassar has partnership with Budasuchi, Lions, Caritas Barke etc. Who support in community ophthalmic services, given by the BKMM. It has three phaco machines in the indoor and two in the outdoor. The BKMM covers 19 provinces, including Papua and Kalimantan; and 14 within South Sulawesi. It has laboratory, optics, pharmacy and medical record section.

OPD services are available for cataract, glaucoma, and refraction. School based outreach services are conducted. Training is provided to general practitioners, nurses and volunteers. This BKMM is also a satellite teaching center of the Hasanuddin University eye department. Undergraduate students are sent here. Nursing training is given for three months on operation theatre management. It also trains volunteers, as stated elsewhere, for managing outreach camps for eye care. Fellowship training is given for three months on phaco surgery. Five of its seven ophthalmologists are also faulty members of the eye department of the Hasanuddin University.

Partnership has been forged with Cicendo for sending trainers; with Jakarta Eye Center; with private practitioners for referring cases to the BKMM; with TV channels; with LSM Dalan and Lions Club for getting support for cataract surgery. CBM used to provide supplies for cataract surgery, e.g., for 100 patients in 2013. But that collaboration has ended. Helen Keller International and University of Hasanuddin eye department will provide support in near future. This will be mainly for screening children. The ‘Seeing is Believing’ project may be signed by the director of the BKMM himself keeping the MoH informed about the deal.

The BKMM also has an ear, nose and throat specialist by government regulation.

20-25 cataract are seen every day, five days a week. The number of surgeries in total is 30 per week.

The BKMM provides retinal service through Yag Laser machine free to 1 to 2 patients per week.

Service is free conditional to only production of national identity card. It does not need any referral.

Both eye and ENT cases are increasing since 2008. One reason is the coverage by insurance and the other is the waiver of referral system.

In 2013 the BKMM, Makassar conducted 1,477 cataract surgeries through community outreach program. These are usually conducted in puskesmus. In the BKMM itself 100 to 150 phaco and 50 other surgeries are done for cataract. Costs for outreach service is covered by the local government (transportation, accommodation and food). Refraction screening was done among 1,463 children in five elementary schools in 2013. Glaucoma screening was done among 531 from three puskesmus in 2013. No screening is done for
diabetic retinopathy. Outreach sessions are held every fortnightly in the island itself while once a month in outer island and provinces.

BKMM, Makassar wants to expand its services in the areas of infection control, tumor and oculoplasty. It serves 13 provinces, i.e. Sulbar, Sulut, Sultra, Sulteng, Gorontalo, Maluku, Malut, Kaltim, Kalteng, Kalbar, Kalsel, Papua and Papua Barat.

It has partnership with: Wahidin Hospital, JEC and Cicendo, DR Praktek Swasta, Sasiun TV Swsta, LSM Dalam and Lions Club, ORMAS, FK Unhas, PEMDA, Pusesmus, RSUD and RS Swasta, Kota and Kabupatenk health departments and provincial government.

Patients are increasing quite fast in the BKMM. In 2008 there were 13,802 patients with eye problem and 87 with ENT problem, while in 2013 the same numbers increased to 30,912 and 2,064 respectively. Laboratory tests increased from about 750 to 4,200 within the same span of time. In 2013 cataract cases attended were 8,392, from who 512 surgeries were done and refractions done were 2,865. A total of 965 cataract surgeries were done in 2013 through outreach services in 8 provinces. In five elementary schools a total of 1,463 screenings were done for refractive error and 531 glaucoma screenings were done in three pukkesmus in 2013.

Reports are sent to Perdami and MoH.

**Love the People Hospital, Makassar**

‘Love People Hospital’ was established recently by the government for serving the poor suffering from eye problems. Heath insurance system did not start yet there but production of citizen card is good enough to provide them free service.

It is ‘C’ type hospital with 300 beds and has been established by the provincial government. Its eye department was started four months back by Dr. Hasna, although the hospital came into existence three years back. It is situation in a mainly industrial area and far away from the city margin. It also difficult to access by conventional modes of transport. All the services are free provided the necessary supports are available, intraocular lens has to be bought by the poor patients.

Per day 10 to 15 patients are seen. Cataract and other minor operations are done but there is no separate indoor beds for the eye patients or pediatric eye cases. The number of surgeries conducted are 5 to 10 per month.

Residents come for conducting cataract and pterygium operations.

Dr. Hasna is contemplating sign a memorandum of understanding with the factory owners to send their workers for service to the eye care department, which will hopefully increase the number of patients.

**RSCM**

Dr. Ikke Sumantri, Director, talked about Ophthalmology study program, faculty of medicine Univ Indonesia
RSCM Kirana is an institute of the CIPTO Hospital of University of Indonesia. It has 35 ophthalmologists, three of who are paediatric ophthalmologists. The eye hospital has 7 operation theatres with 5-7 residents at any time. It trains nurses for one week on eye operation theatre management. One anesthetist comes from the general hospital for the eye operations.

Program improvement, seminars every 2-3 months, and cataract eradication through RSCM (OT) are the special efforts taken up in RSCM. Instruments are received from Cataract Eradication Working Group. Seniors supervise the juniors doing cataract surgery conducted once a month, previously once a week. The reduction is due to inability to manage the patient rush. Love and Tender Clinic- a charity hospital is also used for conducting operation- once a week. OPD is run twice a week for screening and surgery: 25-30/week. It is supported by the Indian philanthropist community. Second one is a new OT in a mosque with three beds- IOA, Sunda Kelapau Every week 30 operations are done. Four puskesmurs are used as OPD, district hospital is used for sending residence. One in Natuna Island. A residence is sent once a month and stay one month. A month about 10 surgeries of all types are done but almost 90% are for cataract. It is supported by the local government. Others, including all types of physicians and surgeons, are sent there and they also stay one month. This is repeated without any break. They local govt covers all the people by insurance. This is the second district which is covered fully y the local govt. Cicendo also has standing with some nearby islands.

RSCM gets 75 residents on a yearly basis. The program first started in 1980. 8 semesters and 4 stages. Yearly residence is 12-16 and graduation is 9-12. Out of every 6 four would be women- 60 to 70% female. 3 steps of training- enrichment stage for 6 months, then apprentice in 10 sub-specialists stage 1 6 months, and 2 stage for 2 years 3 month last stage is about 6 to 12 months independent stage. Residents also come sometimes from other geographical areas.

Three graded steps are followed in the residency program in the University of Indonesia Eye Department, e.g.,

Enrichment stage (6 months): In patient clinic module and Basic knowledge and examination skill module

Apprentice (10 Divisions): stage 1st: 6 months, and stage 2nd: 2 years 3 months. These include:
- Independent and Community Module
- Journal reading (2 times)
- Library series (4 topics)
- Case presentation (2 times)
- Literature review (1 topics)
- Description study (1 time)
- Prospective study (thesis)

Patient management and skill development activity include 10 divisions:
- Log book record
- Case topic or diagnostic problem discussion
- Skill activity
- Cataract surgery : ≥ 60 cases
RSCN conducted 707 cataract operations, 265 vitrectomy, 26 keratoplasty, 570 other operations in the first five months of 2014. The other performances are as below

<table>
<thead>
<tr>
<th>Operations</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Total Numbers in 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract</td>
<td>2278</td>
<td>2511</td>
<td>833</td>
<td>5622</td>
</tr>
<tr>
<td>Vitrectomy</td>
<td>668</td>
<td>712</td>
<td>265</td>
<td>1665</td>
</tr>
<tr>
<td>Keratoplasty</td>
<td>108</td>
<td>115</td>
<td>26</td>
<td>249</td>
</tr>
<tr>
<td>Strabismus</td>
<td>57</td>
<td>51</td>
<td>22</td>
<td>130</td>
</tr>
<tr>
<td>Others</td>
<td>2029</td>
<td>2670</td>
<td>1034</td>
<td>5733</td>
</tr>
</tbody>
</table>

Fellowships are offered in the areas of cataract, cornea and vitreo-retina, and sometimes pediatric. Duration is 6 months for retina and 3 months for phaco and pediatric fellowship. Only two institutes offer fellowship in Indonesia in eye care-RSCM and Cicendo Hospital. Pediatric ophthalmology fellowships given are approx >10 so far. Cataract Society arranges a recertification through five cataract surgeries to be conducted without any complication for those who are not working in RSCM. 6 pediatric fellowships from 2010-2014 were produced by Perdami.

Indonesian Refractionist Optician Association (IROPIN) has a membership of about 2000-3000 refractionists in the country.

RSCM: 3rd floor for operation, 4th floor for indoor. 23 departments in the medical faculty, one is the eye department. The whole hospital has been ISO, JCI (2013), and MoH accredited. The hospital has 900, with 20 beds in the eye department, 35 doctors, nurses 80 (15 in the ward), 9 refractionists, 2 IT staff,

Number of patients increased from 48,684 from 2010 to 89,6160 in 2013 in the OPD mainly because of the national insurance. Funding of the OPD is mostly from the insurance system (75% and OOP is 25%).

No. Of patients operated was 3,538 in 2010 and in 2013 it was 6,167. Almost 90% of the operations are financed by the insurance system.

Retinal surgery required is 100/week but specialists are only 5 so waiting list is about 250. Also there is shortage of equipment.

Getting nurses is difficult because big and private hospitals recruit nurses quite fast.

About 250 medical students graduate every year from the University of Indonesia. Every year, 20 students stay 3 weeks in rotation in RSCM, but for 5 weeks in future. There is one satellite teaching hospitals-one week in RSCM and for presentation and another two weeks in the satellite clinics. There is a system of 360 evaluation of teachers by the students.

For residents 4 puskesmus, the Love and Tender hospital and some secondary hospitals are used for cataract related training.

Every year three continuous education meetings are held in RSCM. Average score of passing level is constantly higher in the RSCM than the national average.

25 cataract surgeries are done among children out of 500 from OPD, per month in RSCM. In three satellites 90 operations are done in outreach sites by residents per week. 2,500
cataract surgeries are done in the hospitals per year and 1,200 in satellites. Including the outreach sites the number would be 4,000-5,000. Of these the children rate is......

A separate women and children hospital is being constructed; when it is ready there will be more beds for eye care children.

In W Java-Banten retinoblastoma is common because of intra-family marriage.

Two districts in east Jakarta-Makassar and Pulogadung are supported by funding from London School and by the University. 25 pediatric........................

The amount given by insurance system for eye care does not cover well the children as their need is much more.

DR screening and awareness programs, supported by HKI, has been concluded. CBM supported low vision program. In house training was arranged for CIPTO staff on refraction. It was a four days training. A three year training program is going on now with HKI. Dr. Anna and a refractionist were trained for one month in Singapore and then they trained the RSCM nurses and refractionists for one month on how to take funduscopic photos and read those. They are called graded nurse. HKI already gave a fundoscope to RSCM and two more will be given soon. Through this support some graded staff were developed. In practice after this training nurses first take and read the DR photos then send for consultation if required. FHF project also concluded in 2013. One ophthalmologist and two nurses were trained for one month in Nepal on SICS by FHF.

The RSCM hospital has 26 beds of which 6 are observation beds, It does not have any ENT specialist of its own, since the ENT department is close by.

After registration a scoring is done for the patients, e.g. risk of falling, gait, support required etc. For adults pain scaling is also done and it was found that lowest score is related to cataract and highest to tumor and glaucoma (8-10).

Number of neurogenic cases that the hospital gets per day is 12-15, that of strabismus 3-4 per day, of glaucoma 250-300 per week, of cataract 60-100 per day. Child cases are 20-30 per days of which about 40% are cataract cases. There is a pre and post operative counsellor, who basically is a nurse.

The hospital has three operation theatres with 2 beds each and two with one bed each. These are linked with the consultant’s offices, so the consultant can observe operations being done by residents.

Executive patients pay much higher rates as they do not have to wait and also are operated upon by consultants.

Outreach site arrangement takes about three months. Local govt. Provides food, accommodation and operation site.

Conditions of outreach program in Jakarta are: a fee of USD 50 per operation and availability of a minimum of 40 cases. For far flung areas the conditions respectively are; USD 80 per operation and a minimum of 100 cases.
The cost of a cataract surgery is seven million Rupiah. For the executive treatment the charge for the same would be nine million Rupiah in RSCM, while it will cost four million Rupiah. Most of the operations conducted are among females.

**CATARACT OPERATIONS**

**NOINSTITUTIONS**

<table>
<thead>
<tr>
<th>CATARACT OPERATIONS</th>
<th>20062007200820092010*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Community Eye 12.28711.24113.29413.73810.318</td>
<td>Centre</td>
</tr>
<tr>
<td>2 Cicendo Hospital 1.8334.6034.653</td>
<td>3 Palembang g Eye 9001.1511.248848 gy Hospital 4 Bali Sensory Hospital 1.3331.895888</td>
</tr>
<tr>
<td>6 CBM 14.5619.6369.9709.1383.791</td>
<td>7 HKI 875790</td>
</tr>
<tr>
<td>9 Hospitals Reports 12.043</td>
<td>Reports TOTAL 30.52226.19147.91839.67727.595</td>
</tr>
</tbody>
</table>

From 2002 to 2009 in total 484 ophthalmologists were produced in Indonesia. **MoHis training 2 person / province / year in programs management and case management**

TOTAL cataract surgeries conducted between 2006 and 2010 are: 30.522, 26.191, 47.918, 39.677, and 27.595 respectively. Most by CBM in the earlier years, community eye centers, Pedami and Cicendo Hospital in the later years. YKI Bali and Bali Sensory Hospital in that order.

**Indonesian Association of Ophthalmologists (IOA)**

The IOA is called Perdami. The Mission of Perdami is: Advocacy, Professionalism, and to act as agent of change. It has an ethical division and a legal section. Its goal is to perform parallel and synergistic work for protecting professional member ophthalmologists in order to promote dignity in community service. The aims of the Association are to ensure quality services to the community and at the same time to ensure the interest of the society.

The IOA has two functional outlets- The Indonesian College of Ophthalmologists (KOI) and the Honorary Council of Medical Ethics (DKEK). It also sits in the Finance Auditing Board (BPK) of the government.

Perdami has 19 provincial branches besides its head office in Jakarta. President Suharto first created a Foundation in 1980s for mass cataract surgery. Now its funds come from corporate social responsibility, Standard Chartered Bank and some philanthropists but the amount is much less.

Perdami’s share of cataract surgery is 15% of the total required surgeries. Mass cataract surgery on Saturdays. In absolute number it is about 24,000 per year. For the next three years the target is 1,000 surgeries/ million population/ year. This can be achieved only if every ophthalmologist performs 13 operations per million population per month. An operation rate of 5,000/ million population/ per year will take 5 to 7 years to remove the present cataract backlog. This will also require that all the available ophthalmologists perform cataract surgeries instead of 50% as of now. At present there is no national registry for cataract surgery. 240,000 cataract surgeries are required every year to remove the backlog. The number of ophthalmologists required would be 2480 but there are 1800
ophthalmologists in the country including 300 residents. 800 more are required in a static condition, without taking into consideration the turnover. As of now even the district level facilities are not capable to give required services

According to 2012 estimate Perdami has a total of 2015 members and manage two professional bodies (Indonesian Ophthalmology Association and the College of Ophthalmologists). Of the 287 are belong to the Jakarta branch. Seventy percent of the ophthalmologists in Indonesia are females.

National Board of Examination and Institutional accreditation are managed by the College for certification of competence for getting professional registration. Every five years certificate examination is conducted for the residents for renewal of registration by the Medical Council. The college accredits the teaching institutes also to remove discrepancy in standard. Private specialists are also accepted as examiners in the board examination. This is a prerequisite for practicing but also another certificate by the district health authority for private practice.

For Institutional accreditation there are three levels- a, b and c. Between 2000 and 2006 there was no standardization or quality assurance but now the Association has this system.

About 60-65 residents graduate every year on average from the 12 eye care departments in the country. They then sit for the examination arranged by the college for competency. Examiners also have to, beside their own institutions/ universities, be certified by the National Board. Exam is taken by Perdami. Perdami does not have any authority to close any institution if the accreditation system finds it below par. Govt has its own accreditation system also.

There is big gap in tertiary care, e.g. sub-specialty and also in general speciality. District or provincial hospitals do not have enough specialists or logistical support for eye care.

Usually an ophthalmologist does 10 cataract surgeries per day in public hospitals and about 20 per day in private practice but this number of specialist is small- about five percent.

Jakarta branch of Perdami also goes to other places such as, on local govt request social cataract program in Kalimantan, Lombok, Sumatera, Papua. Ophthalmologists go for 20-30 surgeries so the number is decided by the patient no. Usually one or two days. Nurse, and other technicians also go with the team. Per month 150 operations in these outreach sites.

Chichendo hospital in Bandung is the only national eye hospital. But some other hospitals have better quality and specialisation. Subspecialty training is heavily dependent on private hospitals.

ASEAN mutual recognition arrangement of medical practitioner was mooted. Article 1-objective of the instrument is to promote adoption of best practice of standard and qualifications and proper opportunities for capacity building and training of medical practitioners but the standard set is that of Singapore which is as high as that of the USA, which is difficult to attain.

For certification of sub-specialty interest groups, such as, societies, agree to give certificate first then the college as per law provides the certificate.
No MLOP is trained by the college or in any public sector hospital or institute. There is no nursing subspecialty in eye care. Every fellow needs to bring two nurses for training so that he/she can get help during surgery and also for follow up of the surgery patients. But there is no certification arrangement for the nurses. Diploma is given by the MoH to the MLOP but not the college. The ophthalmologists are concerned that the low level of training given to them by some private organizations does not impart them the quality for eye care services.

Orbis should be involved in training and also see how many of those who have been trained are actually serving, quality of training and also see that graduation rate is higher, social cataract surgery.

Per day 400-500 patients, of who 20% pay OOP; the others are paid by the local govt, insurance. Indonesia is supposed to cover all the poor through insurance but the responsibility is to the local hospital, which cannot cover. Money recovered is to be sent to the govt. Unit cost for eye surgery on average is Rp. 200,000 in secondary hospitals but in private hospitals it is about 4 times. The service cost is different by tiers of service provision. On average USD 300 is charged for a cataract surgery. Local Govt fixes the rate. Supplies are not given from the hospitals.

Prof. Nila

Poverty and MDG are relevant to eye problems. For productive health vision is important. Five million babies are born every year in Indonesia. About 89.5 million children require eye care. The cataract surgery rate is <500 per year as per a 2004 report of WHO. The distribution rate is 0.2% (Papua) to 41.36% of the ophthalmologists. One reason is non-availability of equipment. On the other hand, complaint of malpractice is increasing.

Capacity building is necessary at primary health care level for effective health insurance coverage. A strengthening process started for primary and secondary care but not for eye care yet.

Only Cicendo Hospital is training MLOP. But there is no interest among the trainees as certificate given is of no use.

All community members have optimal vision 20/20-the right of every citizen.

While Perdam found a prevalence rate of blindness to be about 2.4% the national survey finds it to be 0.4%. Cataract, retina, glaucoma and refraction are the most common problems.

Children are not given eye glasses, on many occasions because parents did not know that their children require eye glasses. CSR data is not available by and large. Backlog is not known in precise terms. A website gives the number of cataract surgeries done by months and years. Cornea collection centers are two. Collection of cornea is 40-50 year but actually these are procured from outside the country. .

Orbis may be involved in increasing skill, training, capacity building among nurses, technology and also technicians to take care of equipment, awareness also especially for diabetic patients. 30 instructors are available for training other ophthalmology on cataract surgeries. Orbis may assist the association to cover international participants for business
class travel in its annual event. Other INGOs do neither bring nor send participants to international events.

Phaco training is given only in Jakarta, as there are few phaco based training facilities. Cicendo and Jakarta have pediatric training programs.

HKI provided training once for developing skill on cataract surgery but that was for about two years ago. Two doctors were sent every two months for the training for 20 to 30 trainees in total. But INGOs usually help in service provision. No telemedicine services yet.

Provision of eye glasses is important. Addressing retinopathy of prematurity and diabetic retinopathy are important too.

Ministry gave fundus camera and screening instruments to 8 of the 34 provinces mainly for cataract surgeries. It is expected that the provinces will take care of the districts under them.

CBM trains on low vision. FHF conducted survey.

There are locations with 1-2 million people where boats go once a week and where no flight goes.

*Mata Hati*

Mata Hati’s only aim is to support cataract surgery throughout Indonesia. Its advisor was also involved with Orbis.

Mata Hati collects money through corporate social responsibility. About 9,000 contributors also give fund to Mata Hati, besides some herbal companies. It supports 5 operations per day. Herbal Company gave some money with which the association itself conducted 42,000 cataract surgeries in last 4 years. Mata Hati gives fund to Perdami to conduct surgeries. Mata Hati also owns the biggest newspaper in Indonesia (Compass). It also runs a television station. Its partner owns the biggest Mandarin newspaper in Indonesia. It had also partnered with Lions Club, Jakarta post and Perdami.

In 1992 ‘Sight First’ by HKI in Indonesia started a ground based program for the first time. Lions gave four million USS dollars and through this program about 52,000 surgeries were conducted by Perdami besides obtaining training of service providers in India. Navy, army and police were also helpful. The then Minister was also a great supporter. From the proceedings of the biography of the advisor of Mata Hati 2,000 surgeries were done. An Indian movie producer working in Indonesia gives fund for 2000-3,000 surgeries per annum. Backlog is probably more than five million eyes.

Cost of surgery is higher in Indonesia because the travel cost to peripheral areas by service providers is more and also tax on instruments is high.

Local government has to be moved, so that they ask for nurses and their training and ensure that the trained nurses stay in the post through some contractual arrangement, e.g., West Java.

*Cicendo Hospital*
West Java, Where Cicendo hospital is situated, has 47 million people. It has 7 cities and 19 districts. West Java is the most populated province in Indonesia.

It is a MOH establishment and was built in 1909 as first eye hospital in Indonesia by the Dutch, for addressing trachoma. In 2009 it was converted into a national eye center. Its present building was built in 2012.

Cicendo seems to be an influential professional organization, since many of its faculty members are heads of different technical and professional wings of IOA, e.g., of glaucoma society of Indonesia, neuro-ophthalmology society of Indonesia, Perdami (vice-president), Chairman of ophthalmic community of Perdami, head of Perdami of West Java etc.,

Cicenco does not deal on posterior segment, glaucoma, DR effectively yet.

Cicenco has 10 surgical operation theatres with one bed in each divided into three types (what are the types?)

It gets about 400-500 patients a day and it operates evening hours and week end hours, albeit for limited hours. However, a 24 hour emergency service is available. A separate Lasik center also operates in the hospital.

Is has a s strength of 535. Of whom 35 are ophthalmologists, and 10 paediatricians. The hospital has 3 anaesthetists. (Any one trained on pediatric anesthesia ?

The hospital has an interesting museum opened in 2010.

The number of outdoor patients in the hospital shows a steep rise from 110000 to 149000 between. However, there is some fall in 2013 due to insurance as patient cannot come directly to the hospital any more. Surgical cases are also declining. Cataract cases are also decreasing since secondary hospital are used now for cataract operation. Lasik operations nonetheless is increasing steeply.

Cicendo is affiliated with the Padjadjaran University since 1961. It has three types of staff-one types is gets the salary from the MoH, the second type from the University and the third type recruited by the hospital itself.

In Indonesia residents cannot change their institute once they are admitted.

Cicendo has drawn memorandum of understanding with private hospitals for two way referral based on the type of diseases a patient is suffering from, i.e., general patients and eye patients and vice versa.

A plan was sketched for training refractionists by MOH for a duration of three years but it was later shelved. Fellowships are offered at Cicendo from three months to twelvee months or even for days and weeks. In future three years courses might be introduced for subspecialisation to be recognized by the university. These certificates will be accepted throughout Indonesia.

The hospital has a library which was termed as the best according to MOH in 2011. No telemedicine service s available yet. There was one center right after the tsunami of 2004 in Aceh. It has become dysfunctional.
Cicendo is the only hospital in Indonesia which has a simulator for phaco and retina (dry lab). Germany gave equipment to Cicendo for three years.

Cicendo also has a fellows' dormitory with 16 rooms with a very reasonable price tag. Twenty residents per year are admitted. Now there are 90 residents.

The Cincendo hospital is conducting a RAAB currently with support from FHF. It conducted a survey in West Java in 2005 also. Sixteen pediatric ophthalmologists have been trained so far in Cicendo between 2007-2014. For 3 to 12 months. Of the 16 one was from Kuwait who got training for 12 months. The rest were from Indonesia. Vitreo-retina fellowship are administered for periods from one week to 12 months. Of 45 trained about 20 were trained for one year each.

Cicendo embarked on what is called a disability friendly hospital initiative in collaboration with CBM along. With a healthy eye hospital initiative, which started in 2014. This will run for five years. A project started in 2007 for cataract surgery for adults. It shows a gradual falling of operations- from 1,000 to 6000/year to 500. CBM provides consumables and USD 10 per operation (when did it start and where is it implemented?). Collaboration with Blind House, a nearby hospital with dormitory and school for rehabilitation started in 2014.

Collaboration for pediatric cataract surgery is going on with CBM, which covers cost of surgery- USD 350 for each eye. Cicendo also started a training program for nurses on community ophthalmology. The fee is 1000 USD for each for 6 weeks. This includes meal and dormitory.

The hospital receives the fund directly to Cicendo's bank account after deposited to and sent from MoF. There is an independent board. Report to the board. Money may also bee used directly according to an approved plan. Sending of money to the MoF is when money comes beyond the plan. It is a national hospital and provincial.

For adult cataract USD 10 is charged per case by Perdami. CBM and many other NGOs, including Tempo Scan Pacific Tbk, a local NGO also give support. Other NGOs pay 50 dollars per case. When Perdami is the collaborator money goes to Perdami.

As a part of the outreach service 2 months are spent in two islands by one resident for three days in Primary eye care facilities of these two island alternatively. Army supports the outreach site in Papua

Cicendo also has taken up a hospital tourism program for eye care. An entero-educative approach has been taken through mass media to prevent people from going abroad for eye care purpose.

HKI is supporting Cicendo for a three years long DR screening project which started in 2013. Two refractionists were trained to become graders. Salary is being paid for these graders for 3 years by HKI as contractual workers. They will be subsequently absorbed as permanent staff of the hospital. Five hospitals in Bandung city and three puskesmus are included in the project. Fundus photograph machine was given by MoH. Graders will screen and take photo and photo will be sent to the retinal ophthalmologist. Grader will inform the patient to come to hospital based on the reading of the retinal photo.
Four ophthalmologists work for community ophthalmology installation. One ophthalmologist, one nurse, 3 refractionists, and one resident spend 3 months in turn. Other ophthalmologists and staff also join when required or in turn.

Waiting list for cataract services is about two months in some of the health facilities in Indonesia. So even insurance will not be able to ensure services.

Cicendo, as per the Perdami practice charges USD 50 for each eye operation in charity and outreach as members of Perdami. Meal of the service providers is covered by Cicendo during travel and local govt provides meals during service provision. Transport is also provided by Cicendo. Each travel takes three days. Outreach has increased after 2007. Ninety outreach services are conducted per year. Every time 200-300 screening are done. 75-100+ surgeries are done in each outreach program, i.e., about 4,000/ year. Until 2011 outreach program was supported by CBM, from 2012 80% is covered by local NGOs. Cataract surgery is done mostly through SICS+IOL. Bad outcome operation is from 17.66% to 20.52% due to novice residents and also because many are at very mature stage and DR with posterior segment problem, they already are in a complicated stage before operation, e.g., sometimes with atrophy. The rate of infection after operation is <1%. Follow up is done only once. Local nurses do sometimes send one week follow up report. 95% of cataract surgeries in outreach is IOL.

PERSADIA an association of the diabetic patients has two branches in Indonesia- in Bandung and Jakarta. It also collaborates with Perdami and buys cataract and other eye care services from Perdami at a concessional rate.

School screening programs are conducted with one ophthalmologist, one resident and one refractionists. Cicendo provides glasses if the child cannot buy glasses. Glasses are made in Cicendo and costs USD 10 per pair. School screening examined 663 children in 2011 and 31,919 in 2013. In a week 3 schools are covered.

Childhood blindness: Cicendo defines a child who is <14 years of age, since after that the patient is given a bed in general ward.

No data is available on childhood blindness in Indonesia.

The pediatric ophthalmology department has, in addition to the pediatric ophthalmologist, one pediatrician, one refractionists, two OT nurse, three nurses in pediatric ophthalmology outdoor. The dept was built in 2003.

No difference was seen between the 2004 and 2013 number of pediatric patients by the type of diseases. Refractive error and amblyopia, cataract and corneal problems are the most common cases of blindness, as seen in Cicendo. Although in OPD conjunctivitis is the second most common problem.

ROP screening is done in other six hospitals also including private ones in Bandung, once a week. 401 children were screened and 226 patients were found in (which year?). 5-15 ICU beds for neonates are available in these hospitals on average. For ROP lasers treatment is given to one or two in 3 months on average.
Cicendo organized children drawing contest in 2004 and 2006. These were supported by IAPB on World Sight Days. One of the paintings was used by the British Journal of Ophthalmology on its cover in 2007 World Sight Day.

Childhood blindness based training was given to teachers, PHC workers, and district education officials in 2005. A one day seminar was organized in 2006 on prevention of childhood blindness, a pediatric ophthalmology nurse course was managed in 2011 for nurses from all over the country. This training also included management of operation theater. About 50 were trained. Pediatric ophthalmology fellowship was awarded to 12 from different parts of Indonesia. This fellowship will continue in next year also. In fact two fellowship courses will be organized next year= one for 12 months and one 6 months.

Congenital rubella syndrome is not so uncommon in Indonesia. Rubella vaccination is believed to be the cause of autism in Indonesia.

**Two thousand cataract surgeries are required per million population per day in Indonesia, which means 7/day, 3 days a week in Bandung.**

Six weeks training is provided on refraction, manage equipment, eye screening for refraction, refer other cases-cataract, glaucoma etc. W. Java is the most populated province in Indonesia W. Java is the most populated province in Indonesia

Community ophthalmology started in 2004. For first three years there was no increase. Highest achievement was in 2011 but started falling since 2012.

Refractive screening is done among children aged 11-15 years. Since at age 7 refractive error does not become stable. School visited were 13, 48, 131, 102 from 2011 to 2014

Supervising program is provided to support the ophthalmology who do not feel confident to operate.

4 million to 10 million/ cataract operation will be required to remove the cataract backlog in Indonesia.

Two point two percent of the people are blind among 50 years of age and above and in one eye it is 5%. In the total population aged 50 years and above is about 20% in Indonesia. In W. Java 170,000 people are blind. If 2000/ million population /year this backlog may be reduced in one year.

In W Java all the ophthalmologists are insured against malpractice. Cicendo has legal consultant to support its practitioners.

IOA national meeting will be held in October 2014 in Yogyakarta. Prof Murakami, IAPB regional coordinator for the western Pacific-healthy eye district has been invited.

No plan has been adopted yet for subspecialty training in Cicendo. Cicendo is centre of excellence for community ophthalmology. One or two residents graduate in community ophthalmology from Cicendo per year. Out of 20 in the community ophthalmology interest group five are trained in community ophthalmology. Two of them are from PICO and three from London ICEH (Prof. Hans Limberg, is the president of ICEH). Tishajan Foundation might fund one of the members for training in community ophthalmology.
www.ofkom.org is the website of the community ophthalmology interest group.

Annexure 7: International eye NGOs

**CBM**

Dr Mathews is the country director.

CBM started working in Indonesia since 1978. It started its Prevention of Blindness program in 2003. Its county office was opened in 2008. CBM currently works in 14 provinces through 24 partners, which, beside the ones named later, are: PPPRBDM of Prof. Dr. Soeharso Solo; Pusat Rehabitsati YAKKUM of Jogjakarta; Dinas Kesehatan Aceh; RSUD Baa- Rote Ndoo; Hasanuddin University of South Sulawesi; Yayasan Okulus-Kabupaten Minahasa Selatan; RBM Toraja- Tana Toraja; Tomou Tou Foundation-Samarinda.

CBM funded a survey, conducted by Cicendo and Perdami in West Java and in South Sulawesi by Hasanuddin University. The survey found the prevalence of preventable Indonesia as 2.5%. The basic health survey conducted by Ministry of Health in collaboration with relevant partners found it to be much less-04% to 0.9%.

There is no population based estimates for children. People’s perception towards eye problems, especially in remote rural areas is fatalistic.

Community eye nurses were trained by CBM. In some Puskesmus they are still working. They are multipurpose workers. In general only 25% of the Puskesmus have nurses.

Pertuni (the Indonesian Blind Union) started in 2004. It has a membership strength of 100,000. Beneficiaries are from low socio-economic status. They are served through improving capacity of eye care professionals, increased access to affordable and good quality low vision services. There are two centers; one in Jakarta and the other in Jogjakarta. These centers cover all the districts in five provinces- Banten, Jakarta, West Java, Jogjakarta and Central Java. These centers conduct assessment, provide low vision devices, training in the use of these devices and also on early detection and referral f cases, educational counseling and rehabilitation. School and home visits are made by the staff of these centers. Low vision students are referred to the Pertuni centers. Awareness is given about the availability of low vision services. Through partner Bhakti Luhur Foundation (LVU) in Malang city, and Malang and Batu districts in East Java rehabilitative, educational and care of children with disabilities is undertaken. The foundation works in 14 provinces. LVU conducts screening in schools. Local volunteers are trained by LVU and community screening camps are held for low vision. LVU prescribes required devices and train on the use of these devices. School and home visits are made and educational counselling provided by the LVU staff. Training is provided to school and health workers to find, refer and provide low vision services. It also conducts awareness programs.

Inclusive System for Effective Eye-care (I-see) aims to attain a CSR of 2,000/ million people by 2017; free spectacles to poor students and inclusion of disable people in jobs. Partners are: Cicendo Eye Hospital and district health authority of Bandung. Other activities include: development of district vision2020 strategies and action plans; physical accessibility in eye health facilities, e.g. ramps and clear signage; train eye care personnel, teachers and community volunteers in finding and referral of cataract and refractive error cases; support
cataract surgery in hospitals, primary health centres and schools; networking among service providers and persons with disability; holding of national seminars.

CBM also supports cataract surgery by providing incentives to the ophthalmologists, training them for their residency (6) and for conducting microsurgery (19) and community eye nurses (108 from 17 provinces).

CBM has partnered with 15 organizations in 11 provinces for cataract services. These are: Perdami of West Java and South Sulawesi; BKMM/BKOM (Ministry of Health Community Eye Health Centers) of East Java, East Kalimantan, West Sumatra and North Sulawesi; district hospitals of Baa Rote (NTT), Saumlaki (Ambon), Poso (Central Sulawesi) and Ambon; private hospitals, e.g. St. Carolus (Jakarta), St. Elisabeth (Bekas), Mojowarno (Jombang) and Bethesda (North Maluku); and foundations, e.g. Okulus (North Sulawesi). Activities include: cataract surgery for poor people in hospitals and primary health care centers; training to eye health care workers for case finding, referral, surgery and follow up, provision of equipment, awareness building through seminar, workshop and an annual bulletin for community eye nurses, and monitoring and evaluation of quality.

Camps are also organized through Puskesmus.

CBM’s operating budget is USD more than 2 billion Rupia per year. It has 13 staff in the country office. It has one coordinator in Bandung.

CBM sends fund directly to its operating partners from the headquarter.

*Helen Keller International*

Dr Patik Gupta is the country director.

The HKI Refractive Error (ChildSight®) program provides a unique school-based delivery mechanism which includes screening for visual acuity and refraction and a free pair of eyeglasses to urban poor students in Jakarta. Students who have more severe eye problems are referred for further testing.

Specifically HKI aims to:

- Improve the vision of junior high students and their teachers;
- Increase capacity for vision screening amongst teachers and health care workers to ensure early detection;
- Increase the awareness for the importance of correcting refractive error and regular eye glasses wear towards good vision; and
- Increase policy, systems and budgetary commitments on the part of key government stakeholders to support the program.

The number of people with diabetes in Indonesia was estimated at 8.4 million in the year 2000 and this number will almost triple to 21.3 million people by the end of 2030. No population-based survey for DR has been conducted among Indonesians to date, but globally the prevalence of DR among diabetics is estimated to be 34.6% which, if held steady, would mean that in 2010 around 2.9 million Indonesians with diabetes will have DR in Indonesia and 7.4 million Indonesians will have DR at the end of 2030. Since 2009, Helen Keller International (HKI) and RSCM have implemented a DR Screening Program in Jakarta.
The program aims to:

- Increase the early detection of DR and long term care for people with diabetes;
- Develop the capacity of the professional eye health workers in DR management;
- Increase awareness towards DR amongst the health care providers; and
- Increase awareness of DR in communities of Jakarta, Bandung and Yogyakarta.

Since 2012, efforts are being made to provide screening services into selected communities in the three provinces. By promoting early detection by screening through fundus photography in the primary health care, more people with diabetes can be reached.

HKI is working in Indonesia since 1970. Its focused areas are: vision correction, vitamin A supplementation, diabetic retinopathy detection and treatment, improving capacity of the health system to provide pediatric eye care and preventing and managing the ocular complications of diabetes. It also enhances capacity of the lay screeners to detect refractive error in adolescents and adults, screening refractive error by teachers, parents and health workers and providing glasses to schools in East Java and Jakarta, community awareness to increase demand for services and knowledge about the eye diseases and their consequences; researching models for taking vision screening services to the communities and improving quality of eye care delivery and expanding access to treatment of chronic diseases, e.g. diabetes retinopathy.

Vit A (eye health) and nutrition. First international office by


School refractive error and DR Bandung and Jog Jakarta 2012 (the third one)

Mostly by Stan Chart. World Diabetic Federation (WDF)y-2009-2012 DR.

Second one is 2014-2017 Jakarta, Bandung and Jogjakarta Drive- DR, Even up to PHC center. Screening has reached only 1%.

Stan Chart five year for child blindness. Provincial Dept of Health, Govt with Orbis and FHF, CBM. Perdami, HKI will be the lead. Fund to come by end of 2014 for SiB. Sulawesi, Jakarta, NTB (Lombok).

Managers for the 3 areas (one for inclusive education). 2 for eye care. MoEd is the partner for inclusive education. 7 provinces are covered. Eye care in 3. In Jakarta 30 staff and West Timor has 20 staff. West Timore only for nutrition.

65-70% is for nutrition and eye health is about 20%. Irish and US govt. Compete bids, e.g., Stan Chart.

Children of 11-15 are covered. One in five has that problem of refraction. 5m among them are suffering from refractive error (25% of the 25 m children). West Java by Chichenddo and Hasanuddin are doing surveys. 5.7% diabetes prevalence, 9 million with diabetes in Indo. About 3 m at DR risk.
2005-2006 HKI did some work with fund from TOTAL but no more. V2020 was developed in 2004-2005 with targets and indicators but no plan of action.

150,000 for eye glasses every three years from health insurance, when certified by ophth. But there is no ophth in every district. Study is needed. Refraction optician (7 academics in private for three years-diploma). Not honoured by insurance system. Regd. optical shops must have RO. Hospital s

Since 2009-2012 tertiary hospital based services in one hospital-RACM (Kirana) of Perdami. Every diabetic is tested by a technician (5), first under some supervision. Photo taken. Software used-digital health care services by UK. No string attached. Some fee given. Jakarta Eye Center has got capacity to manage DR eye before 2009.

Laser treatment is covered but screening is not covered and neither for photography. Since 2012-2013 laser treatment has been included in curriculum in 12. 10-12 are trained per year. Pediatric ophth-40 in the biggest 10 hospitals.

2009-2012 for VR HKI reimbursed for laser treatment for each case, Now covered with insurance. HQ send the fund to HKI. TA only no cash transfer- per diem given. No problem.

HKI usually go for piloting before expanding.

30 USD hotel room/night

USD 1500 to 15000 office rent/month

Staff cost USD 220X15-20/month. Other allowances: USD one year salary for every 5 years

Overhead: legal: USD 2000-5000/year

The programs that HKI implemented between 2000 and 2013 are: sight restoration through cataract surgery, community cataract program, primary eye care and rehabilitation, pediatric ophthalmology, national vitamin A supplementation program support and social marketing, supplementation with multi-micronutrients for pregnant women etc. Its partners are: Ministry of Health; Provincial Departments of Health, DKI Jakarta, West Java, and DI Yogyakarta; Standard Chartered Bank; World Diabetic Foundation; Mondelez International; International Agency for the Prevention of Blindness; the Association of Indonesian Optical Shops (GAPOPIN); Cipto Mangunkusumo Hospital (RSCM), Jakarta: Cicendo Hospital, Bandung; Dr. Sardjito Hospital, Yogyakarta; Indonesia Refraction Opticians Association (IROPIN); Academy of Refraction Opticians (LEPRINDO), Jakarta: the Indonesian Endocrinologists Association (PERKENI); the Indonesian Ophthalmologists Association (PERDAMI) etc.

Fred Hollows Foundation

FHF is working in Indonesia for two years. It funds South Sulawesi and West Java community based eye care. It signed an Mou with MoH in July 2012 for 3 provinces-Bangkulu in Sumatra, NTB and S Sulawesi for a service pattern that integrates from community to provincial level.

Partners: Cicendo and Perdami. RAAB with Cicendo in NTB. 4% prevalence of blindness. Govt in NTB became interested to do something. Works in. 2 districts out of 10-Sumbaawa and Central Lombok-island. Willexpand gradually to all the districts. Partner was BKMM in
NTB in the survey. No ophth was interested to cooperate to avoid losing of private practice. Four senior residents of Brawijay University was used. One was with BKMM already. Training was done by Cicendo for two in Manila by Hans. The other residents were trained by these two. The survey finished last month. Train nurses of Puskesmus. Three were conducted so far-two days training for screening 50 so far-25 from each district. Three weeks for community eye care program for nurses. Local senior opth are used as trainers. She is NTB chair person of Perdami- Farida. After fasting month for cataract screening more training will be given and also in community facilities-PRA technique by own staff, 3 days training-135 from among these two districts of sub-health service units-Pusto (each covers 2 to3 villages), village health posts run by midwives. They will be trained by the nurses trained earlier for three weeks. Village population may vary from 1000 to 10000.

Village leaders will be mobilised to see that their village is known as healthy eye village. They will be asked to develop a plan and develop a village committee for eye health. It will increase demand. Fear, access, cost and lack of company are reasons that people do not go for operation.

Some districts (Sumbaawa) are covered for cataract surgery by ophth coming from another district. BKMM, under provincial govt. (S. Sulawesi and West Java are the 2 BKMM owned by the national govt). Ophth of BKMM will be used instead since moving from one to another district is time consuming and expensive. Jumkesmus for the poor to JKN/ BPJS-universal health coverage/ social health insurance. JKN covers 75 million people, considered poor. Subsidy to the local poor not covered by JKN to pay premium by the local govt. S Sulawesi and W Java shows a rate of 2-3% of avoidable blindness by the recent RAAB. Cicendo opth Dr Sumatri, community ophthal. was called by DG Basic Health Service to hear about the RAAB. DG now wants to prioritise.

As SiB partner FHF will work for refractive error in NTB, after a survey. As per the MoU Govt may ask FHF to work in the other two provinces. But in that case a survey will be done first in these two provinces. Plan for QA for surgery- CSOM (cataract surgery outcome monitoring).

2 Ophthalmologists and 4 nurses from Bankulu were sent to Nepal for training for SICS. One doctor, 2 nurses and one equipment technician from NTB sent for training also to Tilgonga Inst of Opth, Nepal.

Staff of FHF-two, including Mr Iskandar. The other one works from Singapore. FHF contracts local experts. Money to partner goes from Mr Iskandar. Local partner prepares the ToR and the budget.

Registration for an INGO takes about months to a year. Govt may allow to work before registration or MoU. Advised to work through local NGOs before registration. Intelligence officials are involved, which takes long. In case of some INGOs, when their MoU expired they still kept on serving while waiting for the renewal. Indonesian embassy or US embassy may help.

Office rent would be Rupiah 160,000/sq m + service charge 75,000-80,000. Residents may not be used as office. MoU may waive tax. Transports will cost tax. For waiver MoU has to include this provision. Local purchases will not be tax free. Vision2020 is observed ceremonially.
Eye does not kill, so not given enough importance.

**Annexure 8: Private eye hospital: Jakarta Eye Center (JEC)**

JEC’s vision: Optimizing eye sight and quality of life.

Mission: Delivering internationally recognized clinical standard in patient care, go beyond patient expectation both inside and outside the doctor’s office, possessing proven cutting edge technology, investing in the development of highly skilled doctors and staff through research and education.

JEC started its services in 1984 but its first center came into existence at Menteng in 1993. JEC is one of the two private sector eye hospital in Indonesia. The other one is AINI. There are a number of eye clinics though in the private sector.

JEC is a founding member of the ASEAN Association of Eye Hospitals. It is also a member of the World Association of Eye Hospitals. JEC’s uniqueness lies in its offering of all eye care related services through a one stop service center without any need of referral. JEC has since 2012 also started its biggest hospital in Kedoya of Jakarta apart from Menteng. It has received accreditation from the Ministry of Health of Indonesia as a five star institution and also accreditation of the Joint Commission International. A third venture will be opened soon in this year in East Jakarta only for cataract surgery. As a part of corporate social responsibilities JEC clinical staffs provide free cataract surgery to the poor people of their birth places. In total about 400 surgeries are conducted free per year.

JEC has 31 ophthalmologists, 30 beds including 10 as recovery beds, as per the regulation of the Ministry of Health for registration as a private hospital. Of the 31 ophthalmologists 4 are pediatric ophthalmologists. These 4 were trained in India, Japan, Holland and the USA. Twelve of them are also attached with public sector universities. Indonesia has 40 pediatric ophthalmologists. Two third of them are affiliated with public sector universities. JEC has 300 nurses and one technician for repair and maintenance of equipment and machine. The hospital has 15 refractionists who work in shifts. Of them four are for children. JEC also has an emergency medical officer for any medical case in general.

The hospital gets 150,000 outdoor patients, 10% of who undergo surgery. This patient size is increasing by 6% to 10% every year. Of the total patients about 10% to 20% are children in the OPD. Of the total surgeries only 5% is for children. The hospital also gets 35 to 40 retinopathy of prematurity every month.

Services given from JEC are: refractive surgery services, i.e., cataract surgery, LASIK, and keratoplasty services; retinal services; glaucoma services; contact lens services; diabetic retinopathy services; oculoplasty services; pediatric eye care. A phaco-surgery takes about 10 minutes in the JEC hospital.

Approximately 6,000 cataract surgeries were done every year through phaco-technique/laser. But now the number of surgery stands at 15,000 per year. Of these 60% are for cataract of LASIK, 15% for retinal problems, 10% for glaucoma, 5% for oculoplasty and the rest 10% for strabismus and other problems.
JEC is the pioneer of LASIK in Indonesia and since 1997 has done 24,000 LASIK surgeries. At present it conducts about 200 LASIKs per month. It also uses the technique for presbyopia. Failed refractive errors cases are treated by No touch LASIK, Phakic IOL or refractive lens exchange procedure. JEC has the state of the art technology for keratoplasty and retinal services. Every year about 500 vitreoretinal operations are done by JEC. JEC is a referral center for glaucoma implant, glaucoma juvenile and glaucoma congenital. Children with amblyopia, strabismus, congenital cataract, congenital glaucoma, pediatric glaucoma, tumor, retinal problem, pediatric ocular reconstruction, low vision etc. are taken care of at JEC.

JEC follows a quality control protocol. Its bench marking in this regard leads it to maintain the JCI certification. Cataract surgical complication rate is about 4% in Indonesia but in JEC it is almost nil. Operations done in JEC may be seen by the attendants and care takers of patients though a glass window.

JEC maintains a computerized data base but is not fully automated yet, although its hospital in Menteng is said to be automated and is run through EMR system. Its MIS is assisted by the IFA software. It brings out a newsletter on a monthly basis and also organizes a monthly public meeting, for which it has a good conference room. Although it does not have a library in its present site but the authority stated that it possesses a library in its Menteng site.

JEC has a plan to produce optical lenses in future.

Since 2004 JEC offers certificate courses for nurses in ophthalmology. Until 2012, 176 nurses were given this certificate. These nurses come from public as well as private hospitals. On average about 30 MLOPs are trained for a 3 month course. JEC also runs a school for refractionists, which is of three years duration. There are about 7 to 8 such diploma schools for refractionists in Indonesia.

A fellowship program has been enunciated since 1998 for three months for different subspecialty and six months (for retina related problems). Fellowships are provided in the areas of cataract and refractive surgery, vitreo-retina, medical retina, strabismus, ocuoplasty and reconstruction. Up to 2012, 116 ophthalmologists underwent this fellowship. But up to mid-2014 this number stands at about 150.

**Annexure 9: Other local NGOs**

Association of the Disables, Catholic Foundation (Perdaki) etc. work in many provinces, especially in the Eastern part of the country. Perdaki is supported by a Dutch organization. Experts are brought by these organizations from many other countries as well. John Faucet Foundation works in Bali with fund from Australia. There is another NGO in Yogyakarta called Gadjah Mada. Light of the World is also local NGO.

**Annexure 10: Dealing with Government**

Application has to be submitted first at the Ministry of Foreign Affairs. Which would send it to the Ministry of Health. Ministry of Health will form an inter-ministerial committee, which visits the applicant. Ministry signs a memorandum of understanding (MoU) and allocates geographical areas for providing services. Usually the areas given to one INGO is not given to another. This needs to be clearly stated in the MoU. The Ministry would also enter the
type of services allowed, in the MoU. The total process may take several months to one year.

State Secretariat or Ministry of Cabinet Division expects a yearly report copied to the Ministry of Health from the service provider. Center for International Cooperation of the Ministry of Health (PKLM) is the one which deals with the expatriate service provider. Re-registration is done every three years. During the period of re-registration if the previous registration period expires it is still possible to continue services but it will be advisable to enter this into the MoU. Re-registration is done by the inter-ministerial committee, who asks for an interview.

MoH now asks for not only program report but also financial report every three months. Although technical report is submitted on a yearly basis now, MoH is asking for more frequent technical report. Even the district authority is asking for report now.

Since English is a stumbling block it will be pragmatic to keep a respected Indonesian for the meetings to be held at Ministry level.

Government officials expect honorarium, which is about USD for attending meetings. Although some INGOs suggest that they do not pay it.

Expatriates get one year residency permit. An annual renewal takes about three months. Residency permit is dealt with by the Ministry of Health section on International Cooperation first. The application is then sent to State Secretariat/Ministry of Cabinet Affairs. Applications also need clearance from the Immigration department.

While expatriates do not pay income tax now, but in future it might be levied on them. At present only the national staff have to pay income tax. But the thirteenth month pay is not taxed as it is treated as festival allowances. Health insurance premiums to national staff have to be given. After four years if contract a national staff have to be given permanent position. Termination pay to the staff may be hefty after permanency.

There is a country director’s forum for the heads of the international organizations, where issue based discussion takes place.

Offices have to be established in business district although HKI does not follow this norm.

**Annexure 11: Relevance of and opinion about ORBIS**

By Perdami: Flying eye hospital is not cost effective. Sometimes equipment may not work and that takes time to repair. It also needs permission of the Defence Ministry, Local Government administration, and Home Ministry to land. Experts may be brought instead by Orbis for land based training.

By JEC: ORBIS’s contribution is useful in general.

By Perdami: Transfer of knowledge by Orbis is useful but difficult to utilize because of lack of facility. Bureaucratic system complicates and hampers arrangements for Orbis to work in Indonesia. FEH should come after two to three years and not before that for this reason. FEH is difficult to land and park in commercial airports, while Ministry of Defence permission is needed for the FEH of orbis to land in their airport,
By CBM: Orbis has demonstrated good practices, especially among the professionals.

By Directorate of Health: FEH helped train ophthalmologists, which was found to be very useful.

FEU came once in 2010 and then in 2012 in Surabaya. Thirty to forty interns were trained in the FEH. Of them 20 were observers and 10 to 15 got hands on training. Two pediatric ophthalmologists came from abroad to train the faculty members. Fellowship was given to one for three months in the USA. The trainers who came were: Dr. Robert Hoffman and Ms Pauline Poh Kim Dabydeer (nurse) in 2010 and in 2011 Dr. Bradley Charled Black and Ms Jacqueline Norton (nurse). Surgical strabismus set was donated in 2010. In 2011 training was given on screening procedures, surgery and seminars on other areas. In 2012 FEH stayed for three weeks. In the first week areas covered were: glaucoma, cataract, and medical retina. It was administered by Prof. Baramurali Krishna, Prof. T. William, and Prof. Karakalov Chalam. In the second week topics discussed were: occuloplasty, pediatric cataract, cornea, and vitrectomy. This course was taken by Prof. James C Fleming, Prof. Jonathon Song and Prof. Baramurali Krishna. In the third week topics were: surgical retina and strabismus. This week the trainers were: Dr. Giovanni Gardono, Dr. Edward O'Malley and Dr. Bradley Katz. A symposium was organized each Saturday, participated by 150-200 guests. E-communications were held later with the mentors.

Hands on training was organized for nurses on basic life support. Biomedical program was organized for clinical engineers and on anesthesia.

Orbis supported professional meeting of IOA in 2012. Future support for this sorts of programs is expected also, e.g., IOA meeting in 2014 and 2015 and also for fellowship programs.

By professionals in Makassar: Hands on training for physicians, nurses and technician was liked by the trainees as it was a hands on training.

BKMM Surabaya: One FEH is not enough for getting good training. Training scope should be wider for nurses.