

**WHO- NPCB Study on
Existing Human Resources and Infrastructure
for
Control of Childhood Blindness in India.**

2007

REPORT of the Situational Analysis

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LIST OF ABBREVIATIONS

AIIMS: All India Institute of Medical Sciences
AP: Andhra Pradesh
BL: Blindness
CBM: Christoffel Blinden Mission
CCU: Central Coalfields
CO: Corneal Oapcity
CT: Computerized Tomography
DCR/DCT: Dacro cysto rhinostomy
ECCE: Extra Capsular Cataract Extraction
ERG/ EOG: Electroretinogram
ESI: Employees State Insurance
FGD: Focus Group Discussions
HEC: Heavy Engineering Corporation
HP: Himachal Pradesh
HR: Human Resources
ICCE: Intra capsular cataract extraction
ICU: Intensive Care Unit
IOL: Intra Ocular Lens Implant
J & K: Jammu & Kashmir
OCT:
OPD: Out patient clinic
OS: Ophthalmic Surgeon
OT: Operation Theatre
MP: Madhya Pradesh
MRI: Magnetic Resonance Imaging
NGO: Non Governmental Organizations
NPCB: National Program for Control of Blindness
PC: Posterior chamber
ROP: Retinopathy of Prematurity
SAIL: Steel Authority of India
SICS: Small Incision Cataract Surgery
SPO: State Program Officers
SVI: Severe Visual Impairment
UP: Uttar Pradesh
VER: Visually Evoked Response

VR: Vitreo Retinal

WHO: World Health Organization

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1. Background:

The elimination of avoidable blindness is the major goal of the World Health Organization (WHO) and the national governments in different countries¹. The Vision 2020 – Right to Sight initiative is committed to efforts leading to the elimination of major causes of avoidable blindness globally². Childhood blindness and corneal blindness are two areas of concern of all national and international efforts especially in developing countries like India³. Only up to half of the childhood blindness load is amenable to current preventive and curative strategies^{4,5}. In such a situation, it is important to provide comprehensive eye care services to tackle both childhood and corneal blindness.

The World Health Organization maintains a data bank which is used to project the number of blind and visually impaired in the world⁶. The WHO estimates that there were 161 million visually impaired persons including 37 million blind in the world in the year 2002⁷. A major proportion of blindness is concentrated in adults above the age of 50 years⁷.

Though the overall prevalence of blindness and visual impairment is much lower in children compared to adults, the needs of children need priority attention because of the number of years that they have to live with blindness or impaired vision⁸. The global estimate of children with severe visual impairment and blindness (SVI/BL) is 1.5 million, of whom 1 million live in Asia⁴. The 2001 census estimated India's total population to be 1.02 billion and the population of children less than 14 years was projected as 310 million^{9,10}. An estimated childhood blindness prevalence of 0.7 (± 0.3)/1000 children, in India, translates into 218,000 (± 92,000) blind children, which is 4-5 times higher than industrialized countries¹¹.

Childhood blindness is important because it is either preventable or treatable in 50-70% of cases^{3,4}. The cumulative number of blind years lived by children (75 million years) is second only to that due to cataract (125 million years)^{3,4}. Studies in South India showed that only 42.9% of childhood blindness in that area was potentially avoidable, and that refractive errors and strabismus were the major causes of ocular morbidity among children causing monocular or

bilateral blindness¹².

Though no national survey on childhood blindness has been undertaken in India so far, because of the sheer logistics of such an exercise, evidence is available from a few studies across the country. A rate of 0.61 per 1000 children was recorded in a study in Andhra Pradesh, while it was observed to be 0.51 per 1000 children in West Bengal and 1 per 1000 in Delhi¹³. The NPCB uses an estimate of 0.8/ 1000 children using the correlation between under five mortality rates and prevalence of blindness¹³. Based on these assumptions, the Government of India estimates that there are 270,000 blind children in the country¹³.

Causes of childhood blindness have been estimated from two sources in India. One set of estimates is derived from studies done on children in schools for the blind while the other set is based on population based studies. Retina, cornea and whole globe have been reported to be the commonest anatomical site for blindness in children^{5,11,14} reported in institutional studies, while refractive errors and amblyopia were reported to be the commonest causes in population based studies^{12,15-17}. One study documented that there was a temporal trend in the causes of blindness among children at schools for the blind as lesser number of children are now being admitted due to corneal causes compared to the situation seen more than a decade ago¹⁴.

The WHO in collaboration with the Lions SightFirst Programme have launched a project for strengthening of human resources and infrastructure in 30 countries around the world for the prevention and control of childhood blindness⁸. The Project did not include India as one of the countries in this endeavor, and therefore there is an urgent need to take stock of the situation in India and plan for appropriate remedial action. In India, international NGO's including ORBIS, Sight Savers International and CBM are supporting pediatric ophthalmology services.

In the Vision 2020 Action plan, Government of India recognized the need to train 200 ophthalmologists, pediatricians, anesthetists and paramedics in various fields related to pediatric ophthalmology to combat childhood blindness in India by the year 2007^{13,18}. The Government of India has reiterated its support to set up 50 Pediatric Ophthalmology Units in the country by year 2007 so that there is at least one Pediatric Eye Centre for every 20 million population in the country¹³. By the year 2020, the Government of India visualizes the development of pediatric

ophthalmology units at all tertiary care institutions and the availability of pediatric oriented eye surgeons at all secondary level institutions¹⁸. In the long run, it is prudent to provide specially trained pediatric eye care personnel at centers established at the rate of 1 per 10 million population. This is a gigantic task and needs a clear cut plan for development. Unfortunately, there is lack of evidence based data on the existing situation in the country. This report has been commissioned to therefore provide such data for planning of services for the future.

There is a paucity of data on the availability of services to tackle childhood blindness, especially in the public sector. A significant proportion of childhood blindness can be prevented by effective measures at the primary and community level. Though recently data has become available from medical colleges and NGO eye hospitals on the infrastructure and human resources for pediatric eye care, there is a gap regarding evidence from district level eye institutions, especially in the government sector¹².

Planning effective eye care service delivery systems for children needs baseline data on the availability of eye care services for control of childhood blindness at the district level and to obtain estimates of what proportion of ophthalmologists are currently engaged in providing services to children. It is also necessary to obtain information on the available refraction facilities at district and sub district level as refractive errors are a major cause of blindness in children.

The availability and deployment of trained human resources and the establishment and adequate functionality of available infrastructure are both important for the control of childhood blindness since cost effective strategies exist for both situations.

2. Goal

To conduct evidence based research to provide inputs for human resource and infrastructural needs and assess existing services and gaps in delivery of services for elimination of avoidable blindness in children in India, to assist policy formulation and programme implementation for the National Programme for Control of Blindness

Specific Objectives:

- 1) To produce a baseline of Childhood Blindness Services inclusive of existing infrastructure and human resources in India in existing hospitals with special focus on institutions in the public sector.
- 2) To identify gaps and strengthen service delivery in the areas of pediatric eye care, especially in the government hospitals.
- 3) To provide evidence to the Government of India on the training needs for eye care services for pediatric eye care.

3. Methodology:

The study was undertaken over a nine- month period from April 2007 till December 2007.

A questionnaire was developed and piloted by the Department of Community Ophthalmology, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi, India. The questionnaire included information about general eye care services as well as paediatric eye care services. Detailed Instructions on how to fill the questionnaires were enclosed along with the Questionnaires. All questionnaires were administered in English.

A mix of approaches was adopted to collect information:

Mailed Questionnaires: A data bank on the addresses and contact details of a large number of eye care institutions are available with the Community Ophthalmology Unit of Dr. R.P.Centre, AIIMS, and New Delhi. Addresses of Government institutions were obtained from the National Program for Control of Blindness. Addresses of NGO and private institutions was obtained by talking to the State Program Officers, consulting yellow pages, obtaining contact details from international and national NGOs and by searching on the internet. The addresses of the Medical Colleges were obtained from the Medical Council of India and from the State Program Officers for Blindness. List of district hospitals was also obtained by discussions with the State Program Offices.

All international Eye NGO's working in the country were requested to provide information and addresses of their partner hospitals so that the mailing list could be as complete as possible.

All questionnaires were sent by speed post or by courier to ensure speedier turn around.

The questionnaires were also sent to all State Program Officers (SPO) for National Program for Control of Blindness with a request that they should help in harnessing response from all eye hospitals in their respective States.

After 12 weeks of sending out the first questionnaire, a reminder was mailed to all hospitals that had not responded. This action was repeated again after 3 months.

Telephonic follow up: Wherever telephone numbers were available, the research team from the R.P. Centre rang up the heads of the units which had not responded to solicit an early response. In some States telephonic efforts were made more than 3 times to elicit a favourable response.

Continuous follow up was also tried through web communication to improve the response from various institutes.

Visits by Field Investigators: Investigators were recruited to visit States from where information was not forthcoming in time to collect on-the-spot information using the questionnaire schedule. The investigators were recruited preferably from the same states for better approach to the eye care institutions. A total of 17 investigators were recruited for duration of 15 days to 2 months to collect data from various institutes in their respective states. For bigger states two investigators were recruited to cover the maximum number of institutes. For North eastern states one investigator was recruited to coordinate with the respective SPOs and collection of the questionnaires. The research investigators also verified the information sent by districts in a random 10% sample to check for accuracy and completeness. The research assistant coordinated with all the field investigators and SPOs.

Observational visits: It was proposed that 10% of the institutions responding should be visited by a team of dedicated eye care experts to obtain a first hand view of the situation and to verify the information sent by the institutions. A list of institutions to be visited was drawn up randomly. This process allowed triangulation of data and also provided important feedback from the core group of experts. This group also helped in convincing many hospitals to send the completed questionnaires at the earliest.

Focus Group Discussions (FGD): FGDs were proposed to be organized at a random number of institutions to obtain information on the patient perspective on paediatric eye care. It was finally possible to conduct only one FGD in one location to identify community perceptions regarding

childhood blindness. The FGD was conducted among the parents of visually disabled children. More FGDs were desirable but were not possible due to lack of time.

All data was entered into a specially designed database developed in Microsoft Access. Analysis was done using Stata 9.0. Data was checked for consistency and validity through specially written data cleaning packages.

The study proposed to collect information from all eye hospitals in the country. The intention was to collect in depth information from all hospitals, which were presumed to have a capacity to deliver paediatric eye care services. So though questionnaires were sent out to a large number of hospitals and clinics after obtaining addresses from a wide range of sources, emphasis on follow up to improve response rates concentrated only on institutions which had the potential to deliver the paediatric eye care services identified for this study. This information was generally obtained through a process of consultation with experts in the field of eye care. Wherever desirable, information was obtained from other sources and existing data bases when questionnaires were not returned from some hospitals during the present survey when complete and valid data was sent to the Community Ophthalmology Unit in the preceding two years.

4.Results:

Responding Hospitals

A total of 1053 hospitals responded to the questionnaire. Responses were received from all States and Union Territories in the country except the state of Nagaland and the Union Territories of Dadra Nagar Haveli, Daman Diu, Andaman Nicobar Islands and Lakshadweep.

The largest number of responses were received from the State of Gujarat where a large number of private practitioners provided data to the field investigator (Table 1).

Table 1: Distribution of responded institutions

State	No. responded	%
Andhra Pradesh	86	8.17
Arunachal Pradesh	9	0.85
Assam	27	2.56
Bihar	58	5.51
Chandigarh	2	0.19
Chhattisgarh	29	2.75
Delhi	59	5.6
Goa	2	0.19
Gujarat	223	21.18
Haryana	42	3.99
Himachal Pradesh	18	1.71
Jammu & Kashmir	1	0.09
Jharkhand	40	3.8
Karnataka	28	2.66
Kerala	19	1.8
Madhya Pradesh	41	3.89
Maharashtra	51	4.84
Manipur	14	1.33
Meghalaya	2	0.19

Mizoram	1	0.09
Orissa	9	0.85
Pondicherry	6	0.57
Punjab	60	5.7
Rajasthan	50	4.75
Sikkim	1	0.09
Tamil Nadu	58	5.51
Tripura	5	0.47
Uttar Pradesh	67	6.36
Uttrakhand	37	3.51
West Bengal	8	0.76

The government sector contributed 41.5% (437) of the responses while the NGO/ private sector contributed 58.5% (616). The distribution of the different sectors in the various States is shown in Table 2.

Table 2: Status of responding hospitals in different States

State	N	Govt (n)	Govt (%)	Others (n)	Others (%)
Andhra Pradesh	86	27	31.4	59	68.6
Arunachal	9	8	88.9	1	11.1
Assam	27	24	88.9	3	11.1
Bihar	58	42	72.4	16	27.6
Chandigarh	2	2	100	-	-
Chatisgarh	29	19	65.5	10	34.5
Delhi	59	21	35.6	38	64.4
Goa	2	1	50	1	50
Gujarat	223	34	15.2	189	84.8
Haryana	42	24	57.1	18	42.9
HP	18	18	100	-	-
J&K	1	1	100	-	-
Jharkhand	40	22	55	18	45
Karnatka	28	7	25	21	75
Kerala	19	5	26.3	14	73.7

MP	41	26	63.4	15	36.6
Maharashtra	51	16	31.4	35	68.6
Manipur	14	9	64.3	5	35.7
Meghalaya	2	2	100	-	-
Mizoram	1	0	-	1	100
Orissa	9	3	33.3	6	66.7
Pondicherry	6	3	50	3	50
Punjab	60	37	61.7	23	38.3
Rajasthan	50	32	64	18	36
Sikkim	1	0	-	1	100
Tamilnadu	58	13	22.4	45	77.6
Tripura	5	2	40	3	60
UP	67	24	35.8	43	64.2
Uttarakhand	37	10	27.	27	73
West Bengal	8	5	62.5	3	37.5
Total	1053	437	41.5	616	58.5

The list of responding hospitals in the country is shown in Annexure A.

Available Human Resources in Responding Institutions

Information was collected from all the responding institutions on the available human resources working at the hospitals and their employment status.

Overall, there were 3654 ophthalmologists working at the 1053 responding institutions (Table 3). On an average there were 3.5 ophthalmologists per hospital across the country. However the distribution varied significantly across the different States (Range: 1-12.0 ophthalmologists/hospital). Nine States and Union Territories had a mean of > 5 ophthalmologists / per hospital (Chandigarh, Delhi, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Pondicherry, Tamil Nadu and West Bengal). The average number of anaesthetists per hospital was 2.1.

Table3: Available Human Resources at Responding Institutions

State	Total OS	Mean OS/hosp	Total Anesthetists	Mean Anesths/hosp	Total Optometrists	Mean Optom/hosp	Total Nurses	Mean Nur/hosp	Total Counselors	Mean Couns/hosp
	N=1053	N=1053	N=383	N=383	N=485	N=485	N=489	N=489	N=216	N=216
AP	384	4.5	87	1.9	208	3.1	478	6.9	137	2.9
Arunachal	12	1.3	3	1.5	8	1.3	11	2.8	0	
Assam	118	4.4	19	1.1	30	1.3	48	2.0	1	1.0
Bihar	144	2.5	29	1.5	71	1.7	100	4.0	14	1.4
Chandigarh	24	12	0		4	4.0	1	1.0	0	
Chhattisgarh	61	2.1	39	1.7	15	1.4	201	8.4	17	2.4
Delhi	378	6.4	117	3.0	142	2.9	664	17.0	32	1.8
Goa	8	4	1	1.0	0		4	4.0	0	
Gujarat	334	1.5	27	1.7	59	2.8	204	8.9	15	1.9
Haryana	78	1.9	16	1.2	25	1.9	166	9.8	10	1.3
HP	35	1.9	2	1.0	4	1.3	8	2.7	4	4.0
J & K	12	12	0	0	2	2.0	10	10.0	0	
Jharkhand	100	2.5	31	1.3	42	1.4	167	6.0	13	1.3
Karnataka	146	5.2	39	3.3	16	1.8	59	4.9	9	1.5
Kerala	127	6.7	12	4.0	16	3.2	33	6.6	3	1.0
MP	139	3.4	23	1.4	48	2.8	89	3.9	13	1.9
Maharashtra	337	6.6	146	3.8	107	3.7	411	11.1	42	2.3
Manipur	22	1.6	4	1.3	5	1.7	0		0	
Meghalaya	8	4	2	2.0	13	6.5	12	6.0	1	1.0

Mizoram	1	1	1	1.0	0		2	2.0	0	
Orissa	30	3.3	1	1.0	20	3.3	25	5.0	7	2.3
Pondicherry	34	5.7	24	4.0	27	4.5	89	14.8	18	4.5
Punjab	141	2.4	35	1.5	49	2.0	136	5.9	19	1.5
Rajasthan	112	2.2	14	1.6	28	3.1	40	3.6	8	1.6
Sikkim	3	3	0	0	1	1.0	1	1.0	0	
Tamil Nadu	521	9	68	2.1	260	7.2	819	17.4	181	8.2
Tripura	20	4	12	3.0	11	2.2	41	8.2	3	1.0
Uttar Pradesh	180	2.7	29	1.8	68	1.9	305	11.3	10	1.3
Uttrakhand	52	1.4	17	1.5	52	1.9	66	2.9	15	1.4
West Bengal	93	11.6	1	1.0	8	4.0	42	21.0	1	1.0
Total	3654	3.5	799	2.1	1339	2.8	4232	8.7	573	2.7

A total of 1339 optometrists/ophthalmic assistants were reported to be working at 485 hospitals with an average of 2.8 optometrists/ ophthalmic assistants per hospital. The highest State level mean was reported from Tamilnadu (7.2/hospital).

4232 nurses were reported to be working at 489 hospitals which provided data regarding nurses working at their respective hospitals. The average of 8.7 nurses per hospital was seen across the country when data was pooled together. The highest mean value was reported from West Bengal (21.0). However this may be due to the smaller number of respondents from this State as well as the different profile of the responding hospitals. It was also not possible to state what proportion were formally trained and what proportion were informally or on-the-job trained personnel.

A smaller number of hospitals (216) reported on the availability of counsellors at the hospitals. The mean number of counsellors reported was 2.7 per responded hospital. In 7 States, not a single counsellor was reported to be working at any hospital in the specific State. These states included Assam, J&K, Mizoram and Sikkim. In other States also whether the people reported were formally trained is not known.

Human Resources for Pediatric eye care services

A total of 72 institutes reported having at least one pediatric Ophthalmologist or pediatric oriented ophthalmologist. 66 pediatric ophthalmologists and 84 pediatric oriented ophthalmologists were reported from the responding hospitals (Table 4).

It was reported that there were 66 trained pediatric ophthalmologists (mean: 1.5 per responded hospital) and 84 pediatric oriented ophthalmologists (mean: 1.6 per responded institution) across the country. Additionally, there were 752 other ophthalmologists who were not formally trained but performed pediatric surgeries (Mean 3.1 Ophthalmologists per responded institution). Pediatric ophthalmologists are reported from 12 states (AP, Chhattisgarh, Delhi, Gujarat, Karnataka, MP, Maharashtra, Orissa, Pondicherry, Punjab, Tamil Nadu and West Bengal). The mean pediatric Ophthalmologist was reported maximum in Tamilnadu (2.4). Therefore most States in the country did not have the services of a pediatric ophthalmologist and it was the southern and western parts of the country where services of such trained personnel were more in evidence.

Effective pediatric eye care services require the support of skilled neonatologists and anesthetists. It was observed that 442 Pediatric neonatologists were reported (171 institutions) with a mean of 2.6 per institution (Table 5). Similarly, an average of 1.6 pediatric anesthetists per institute was reported in 135 institutes.

Among the nurses there were 416 trained pediatric nurses (mean: 3.4 nurses per institute). The mean number of trained nurses per hospital reported by hospitals in Delhi (11.4) was the highest in the country (Table 6).

There were 573 counselors reported by 216 institutes (mean: 2.7 per institute). 113 pediatric counselors were reported to be working at 63 institutes (Mean: 1.8 per institute).

In addition there were 106 trained pediatric optometrists (mean: 1.4 per reported institute) and 75 trained pediatric orthoptists (Mean: 1.6 per reported institute) working in pediatric ophthalmology departments across the country.

Table 4: Ophthalmologists for pediatric eye care

State	Total pediatric OS	Mean pediatric OS	Total pediatric oriented OS	Mean pediatric oriented OS	Total other OS	Mean other ophthal
	N=43	N=43	N=51	N=51	N=243	N=243
Andhra Pradesh	4	1.0	13	1.1	58	1.9
Arunachal	0	0	0	0	4	4.0
Assam	0	0	0	0	16	8.0
Bihar	0	0	0	0	13	2.2
Chandigarh	0	0	1	1.0	5	5.0
Chhattisgarh	1	1.0	0		19	1.6
Delhi	8	2.0	6	1.0	100	4.3
Goa	0	0	0	0	0	0
Gujarat	3	1.0	9	1.5	52	3.1
Haryana	0	0	0	0	15	3.8

HP	0	0	0	0	2	1.0
J & K	0	0	0	0	5	5.0
Jharkhand	0	0	0	0	15	1.5
Karnataka	3	1.0	6	2.0	25	2.8
Kerala	0	0	3	3.0	38	7.6
Madhya Pradesh	1	1.0	0	0	24	2.4
Maharashtra	16	1.3	10	1.4	112	3.9
Manipur	0	0	0	0	11	2.8
Meghalaya	0	0	0	0	3	1.5
Mizoram	0	0	0	0	1	1.0
Orissa	2	2.0	0	0	7	3.5
Pondicherry	1	1.0	3	1.5	12	2.4
Punjab	2	1.0	1	1.0	43	2.4
Rajasthan	0	0	1	1.0	7	1.4
Sikkim	0	0	0	0	0	0
Tamil Nadu	24	2.4	30	3.0	82	4.8
Tripura	0	0	0	0	7	1.8
Uttar Pradesh	0	0	0	0	39	3.3
Uttarakhand	0	0	0	0	14	1.6
West Bengal	1	1.0	1	1.0	23	11.5
Total	66	1.5	84	1.6	752	3.1

Table 5: Other specialists for pediatric eye care

State	Ped neont Total	Ped neont Mean	Ped anaesth Total	Ped anaesth Mean
	N=171	N=171	N=135	N=135
Andhra Pradesh	56	2.3	38	1.5
Arunachal Pradesh	2	2.0	0	
Assam	5	5.0	2	2.0
Bihar	12	1.7	2	1.0
Chandigarh	0	-	0	-
Chhattisgarh	21	1.6	7	1.8
Delhi	48	4.4	19	2.1
Goa	0	-	0	-
Gujarat	38	2.7	9	1.3
Haryana	4	1.3	1	1.0
Himachal Pradesh	0	0	0	0
Jammu & Kashmir	0	0	0	0
Jharkhand	14	1.8	11	1.1
Karnataka	27	3.4	19	2.4
Kerala	0	-	0	-
Madhya Pradesh	2	1.0	3	1.0
Maharashtra	100	4.2	38	1.8
Manipur	2	2.0	1	1.0
Meghalaya	0	0	0	0
Mizoram	1	1.0	0	0
Orissa	0	0	1	1.0
Pondicherry	11	2.8	4	1.0
Punjab	27	2.1	19	1.6
Rajasthan	6	1.5	4	1.0
Sikkim	0	0	0	0
Tamil Nadu	33	1.9	25	1.9
Tripura	14	3.5	2	2.0
Uttar Pradesh	8	1.6	3	1.0
Uttrakhand	11	1.8	4	1.3
West Bengal	0	0	1	1.0
Total	442	2.6	213	1.6

Table 6: Trained HR for pediatric eye care

State	Train ped nur	Trained ped nur	Trained ped coun	Train ped couns	Train ped optometrist	Train ped optometrist	Trained ped ortho	Trained ped ortho
	N=122	Mean	N=63	Mean	N=74	Mean	N=47	Mean
AP	42	1.9	20	1.4	22	1.5	9	1.3
Arunachal	0	0	0	0	0	0	0	0
Assam	0	-	0	-	0	-	0	-
Bihar	4	1.3	1	1.0	2	1.0	1	1.0
Chandigarh	0	-	0	-	0	0	0	0
Chhattisgarh	17	3.4	2	1.0	1	1.0	1	1.0
Delhi	80	11.4	2	1.0	16	1.5	12	1.3
Goa	0		0		0	-	0	-
Gujarat	33	5.5	7	1.8	8	1.6	6	1.2
Haryana	2	2.0	2	2.0	0	-	0	-
HP	0	-	0	-	0	-	0	-
J&K	0	-	0	-	0	-	1	1.0
Jharkhand	13	1.9	1	1.0	3	1.0	2	1.0
Karnataka	18	3.0	6	1.5	2	1.0	2	1.0
Kerala	0		0	-	0	-	0	-
MP	2	1.0	3	1.5	2	1.0	3	1.5
Maharashtra	75	3.4	15	1.5	10	1.1	5	1.3
Manipur	0	-	0	-	0	-	0	-
Meghalaya	0	-	0	-	0	-	0	-
Mizoram	0	-	0	-	0	-	0	-
Orissa	1	1.0	1	1.0	0	-	0	-
Pondicherry	10	3.3	3	1.5	2	1.0	1	1.0
Punjab	7	1.4	3	1.0	14	2.0	4	1.3
Rajasthan	4	1.3	3	1.0	2	1.0	0	-
Sikkim	0		0		0	-	0	-
Tamil Nadu	63	3.9	41	4.1	16	1.8	25	4.2
Tripura	12	12.0	0		0	-	0	
UP	14	2.8	1	1.0	2	2.0	2	1.0
Uttrakhand	18	3.0	2	1.0	4	1.3	1	1.0
West Bengal	1	1.0	0	-	0	-	0	-
Total	416	3.4	113	1.8	106	1.4	75	1.6

Available Infrastructure and Clinical Ophthalmic Services in responding Hospitals

Among the 615 hospitals that provided data on the available services, it was observed that 11% of the hospitals had a dedicated pediatric unit (Table 7). These were mostly in the States of AP, Delhi, Gujarat, Kerala, Maharashtra and Tamilnadu. A dedicated ward for children was reported by 17.9% of the hospitals. In 10 States, more than 20% of the responding hospitals reported a dedicated pediatric ward (Table 7). 22.8% of hospitals reported a dedicated out patient clinic service for children. AP, Delhi, Gujarat, Karnataka, Maharashtra, Rajasthan and Tamilnadu reported such facilities.

Table 7: Institutes reporting different pediatric facilities

State	Separate pediatric Unit (%)	Separate pediatric ward (%)	Separate pediatric OPD (%)	Total
Andhra Pradesh	11 (15.1)	15 (20.6)	18 (24.6)	73
Arunachal Pradesh	0	0	1 (12.5)	8
Assam	0	0	0	24
Bihar	1 (1.8)	3 (5.5)	5 (9.1)	55
Chandigarh	0	0	1 (100)	1
Chhattisgarh	1 (3.6)	4 (14.3)	8 (28.6)	28
Delhi	10 (18.5)	9 (16.7)	14 (25.9)	54
Goa	0	0	0	1
Gujarat	5 (17.2)	6 (20.7)	8 (27.6)	29
Haryana	1 (3.6)	1 (3.6)	3 (10.7)	28
Himachal Pradesh	0	0	0	3
Jammu & Kashmir	1 (100)	0	1 (100)	1
Jharkhand	0	6 (15.8)	5 (13.2)	38
Karnataka	1 (8.3)	5 (41.6)	5 (41.6)	12
Kerala	1 (20)	2 (40)	1 (20)	5
Madhya Pradesh	1 (3.5)	4 (13.8)	4 (13.8)	29
Maharashtra	16 (40)	20 (48.8)	23 (56.1)	40
Manipur	0	0	0	13
Meghalaya	0	0	1 (50)	2
Mizoram	0	0	0	1
Orissa	1 (20)	0	1 (20)	5

Pondicherry	3 (50)	2 (40)	3 (50)	6
Punjab	0	3 (11.5)	6 (22.2)	27
Rajasthan	2 (25)	2 (22.2)	5 (55.6)	8
Sikkim	0	0	0	1
Tamil Nadu	8 (17.4)	16 (34.8)	19 (40.4)	46
Tripura	0	1 (20)	1 (20)	5
Uttar Pradesh	2 (5.3)	4 (10.8)	2 (5.3)	38
Uttrakhand	2 (6.3)	6 (18.8)	4 (12.5)	32
West Bengal	1 (50)	1 (50)	1 (50)	2
Total	68 (11.06)	110 (17.9)	140 (22.8)	615

In 80.9% of the hospital, pediatric out patient clinics were available on all working days (Table 6). Similarly, nearly half (74/156) reported having access to an OT on a daily basis for children (Table 8).

Table 8: Frequency of Pediatric Eye OPD and Pediatric OT

State	Pediatric Eye OPD				Pediatric OT			
	Daily	3-5 day/wk	1-2 Day/Wk	Institutions responded	Daily	3-5 day/Wk	1-2 day/wk	Institutions responded
Andhra Pradesh	40	3	3	46	7	5	5	17
Arunachal	4	1	0	5	0	0	0	0
Assam	2	2	0	4	1	2	0	3
Bihar	34	3	1	38	1	0	1	2
Chandigarh	0	0	1	1	0	0	1	1
Chhattisgarh	13	2	1	16	1	1	4	7
Delhi	24	16	2	42	2	2	4	8
Goa	0	0	0	0	0	0	1	1
Gujarat	11	8	3	22	5	4	5	14
Haryana	18	2	0	20	2	2	1	5
J&K	0	0	1	1	1	0	0	1
Jharkhand	25	3	1	29	4	1	0	5
Karnataka	8	1	1	10	2	0	5	7
Kerala	4	0	0	4	1	0	1	2
MP	15	2	0	17	5	0	1	6
Maharashtra	29	1	4	34	15	2	6	23
Manipur	5	0	1	6	0	0	0	0
Meghalaya	2	0	0	2	0	0	1	1
Mizoram	0	1	0	1	0	0	0	0

Orissa	4	0	0	4	2	0	0	2
Pondicherry	4	0	0	4	1	1	2	4
Punjab	16	0	2	18	6	1	7	14
Rajasthan	6	0	0	6	2	0	3	5
Tamil Nadu	27	1	2	30	8	1	4	13
Tripura	3	2	0	5	0	0	2	2
Uttar Pradesh	20	3	1	24	5	2	0	7
Uttrakhand	15	2	0	17	2	0	2	4
West Bengal	1	1	0	2	1	1	0	2
Total	330	54	24	408	74	25	56	156

79 hospitals reported having dedicated beds for children (Table 9). The mean pediatric beds per responding institute were 7.5 beds. This ranged from a minimum of none in many States and Union Territories to a high of 23 pediatric beds/ hospital in Madhya Pradesh. This has to be interpreted with caution as the type of hospital responding in the different States is variable and therefore States where more tertiary care hospitals responded compared to secondary care hospitals would report a higher proportion with dedicated beds for children. A majority of the beds in eye hospitals were of free-paying category (Table 10).

Considering the pooled data, it was observed that OT was available for an average of 10.5 hours per week for pediatric ophthalmic surgery (Table 11).

Sixty percent of the hospitals reported that they provided emergency care services for eye emergencies (Table 12). Such facilities were poor in Assam. An optical unit was reported by 55.6% of hospitals when pooled data was considered (Table 12). Lesser proportion of hospitals in Gujarat, Kerala, Maharashtra, Pondichery and Uttarakhand had access to optical units within the hospital set up (Table 12).

Table 9: Total eye beds and pediatric eye beds in responding institutes

State	responded For total beds	Mean bed/hospital	responded for Ped beds	Mean Ped eye bed/hospital
Andhra Pradesh	83	42.2	15	7.1
Arunachal Pradesh	3	8	1	10.0
Assam	26	17.7	1	2.0
Bihar	48	16.3	1	1.0
Chandigarh	2	37.5	0	-
Chhattisgarh	23	19.4	2	1.5
Delhi	50	35	2	21.0
Goa	2	16.5	0	-
Gujarat	81	26.4	8	5.5
Haryana	37	15.6	1	-
Himachal Pradesh	18	15.7	0	-
Jammu & Kashmir	1	75	0	-
Jharkhand	34	17.4	3	3.3
Karnataka	25	42.8	2	10.0
Kerala	17	68.9	1	10.0
Madhya Pradesh	40	31.6	1	23.0
Maharashtra	48	43.7	16	7.4
Manipur	3	15.7	0	-
Meghalaya	2	34	0	-
Mizoram	1	15	0	-
Orissa	9	39.2	1	5.0
Pondicherry	6	147.5	3	3.7
Punjab	57	17	4	11.0
Rajasthan	42	24.1	2	15.0
Sikkim	1	16	0	-
Tamil Nadu	55	97.3	9	7.6
Tripura	5	17.8	1	5.0
Uttar Pradesh	58	47.7	2	11.0
Uttrakhand	25	24.4	3	1.7
West Bengal	8	60.4	1	10.0
Total	810	35.8	79	7.5

Table 10: Mean total eye beds and pediatric eye beds

State	Responded Institutes	Free beds	Paid beds	Total beds	Pediatric Eye beds
		N=603	N=347	N=810	N=79
Andhra Pradesh	86	2802	669	3501	107
Arunachal Pradesh	9	24	0	24	10
Assam	27	393	18	461	2
Bihar	58	623	159	782	1
Chandigarh	2	0	75	75	0
Chhattisgarh	29	309	137	446	3
Delhi	59	1236	222	1752	42
Goa	2	30	3	33	0
Gujarat	223	1356	275	2139	44
Haryana	42	467	69	578	0
Himachal Pradesh	18	136	34	282	0
Jammu & Kashmir	1	75	0	75	0
Jharkhand	40	326	236	591	10
Karnataka	28	779	261	1070	20
Kerala	19	804	368	1172	10
Madhya Pradesh	41	806	109	1265	23
Maharashtra	51	1537	534	2098	119
Manipur	14	45	0	47	0
Meghalaya	2	50	18	68	0
Mizoram	1	0	15	15	0
Orissa	9	256	97	353	5
Pondicherry	6	730	155	885	11
Punjab	60	581	304	971	44
Rajasthan	50	427	206	1013	30
Sikkim	1	16	0	16	0
Tamil Nadu	58	3758	1591	5349	68
Tripura	5	89	0	89	5
Uttar Pradesh	67	1604	1076	2767	22
Uttarakhand	37	425	186	611	5
West Bengal	8	281	202	483	10
Total	1053	19965	7019	29011	591

Table 11: Mean OT tables/Institute and mean Hours of OT/ week

State	Mean OT tables/institution	Mean hrs of OT/ Week	Mean hrs Paed OT/ Week
	N=726	N=696	N=92
Andhra Pradesh	2.4	29.1	14.1
Arunachal	1.7	16.8	12.0
Assam	1.9	20.0	18.0
Bihar	1.9	19.0	4.0
Chandigarh	2	51.0	-
Chhattisgarh	2.1	27.1	5.3
Delhi	2.4	27.7	10.7
Goa	2	33.0	4.0
Gujarat	3.1	28.3	9.0
Haryana	1.7	23.3	-
HP	1.4	21.2	-
J & K	5	36.0	-
Jharkhand	1.7	21.4	9.7
Karnataka	2.5	25.0	5.0
Kerala	2.9	28.7	19.0
MP	2.7	27.5	7.0
Maharashtra	3.2	31.2	11.4
Manipur	1	13.0	-
Meghalaya	3	28.0	-
Mizoram	2	8.0	-
Orissa	2.3	30.8	-
Pondicherry	4.3	29.1	10.3
Punjab	2.4	27.8	16.0
Rajasthan	3	28.0	24.0
Sikkim	2	16.0	-
Tamil Nadu	4.5	28.9	7.5
Tripura	2.4	20.2	3.5
Uttar Pradesh	2.5	31.2	3.0
Uttrakhand	1.7	30.2	12.0
West Bengal	4.9	19.6	2.0
Total	2.6	26.9	10.5

Table 12: Institutes reporting separate Emergency Unit and Separate Optical Unit

State	Separate Emergency Unit (%)	Separate Optical Unit (%)	Institutes Responded
Andhra Pradesh	39 (57.4)	25 (36.8)	68
Arunachal Pradesh	4 (50)	4 (57.1)	8
Assam	2 (8.3)	22 (91.7)	24
Bihar	37 (66.1)	44 (78.6)	56
Chandigarh	1 (100)	0	1
Chhattisgarh	20 (76.9)	19 (73.1)	26
Delhi	20 (20)	31 (62)	50
Goa	1 (100)	0	1
Gujarat	17 (63.0)	10 (35.7)	27
Haryana	14 (51.9)	14 (56)	27
Himachal Pradesh	0	3 (100)	3
Jammu & Kashmir	1 (100)	1 (100)	1
Jharkhand	29 (74.4)	31 (79.5)	39
Karnataka	7 (63.6)	8 (66.7)	11
Kerala	6 (100)	2 (33.3)	6
Madhya Pradesh	13 (44.8)	16 (61.5)	29
Maharashtra	31 (81.6)	13 (34.2)	38
Manipur	3 (60)	2 (66.7)	5
Meghalaya	2 100)	1 (50)	2
Mizoram	1 (100)	0	1
Orissa	4 (57.1)	3 (42.9)	7
Pondicherry	6 (100)	1 (16.7)	6
Punjab	23 (85.2)	7 (25.9)	27
Rajasthan	9 (81.8)	3 (27.3)	11
Sikkim	1 (100)	1 (100)	1
Tamil Nadu	25 (53.2)	27 (56.3)	47
Tripura	5 (100)	3 (60)	5
Uttar Pradesh	23(60.5)	24 (64.9)	38
Uttrakhand	17 (53.1)	12 (38.7)	32
West Bengal	1 (50)	2 (100)	2
Total	362 (60.4)	329 (55.6)	599

Table 13: Total OPD and pediatric OPD

State	Mean total OPD	Mean total ped OPD	Mean total new OPD	Mean ped New OPD	Mean refractions	Mean Ped refrac
	N=711	N=425	N=701	N=421	N=632	N= 434
AP	28813.9	3559.2	18640.5	2609.9	11323.1	1889.3
Arunachal	2615.1	613.0	2196.6	451.8	1301	134.8
Assam	4030.6	173.2	3060.2	145.5	1443.5	51.0
Bihar	16619.4	2569.2	13348.8	2039.4	5494	689.2
Chandigarh	78409.5	-	20381	-	18185.5	-
Chhattisgarh	10500.8	1901.4	7350.5	1228.3	4013	719.6
Delhi	25611	8412.7	13710.6	4060.7	6412.2	2968.5
Goa	28196.5	-	11044.5	-	6254	-
Gujarat	30516.3	2515.0	16446.5	1668.5	12440	1572.9
Haryana	18640.3	4169.5	13776.6	3084.6	6772.8	2503.3
HP	17563.4	5618.3	12109.6	3517.7	8409.6	1350.7
J & K	31964	5622.0	31964	-	14342	1760.0
Jharkhand	12352.8	2196.3	9680.9	1699.6	5049.8	918.4
Karnataka	22820.5	2282.7	13959	1331.0	9050.1	1440.6
Kerala	51790.8	20666.8	31738.1	13567.0	30796.1	10359.6
MP	18033.4	2827.2	13756.4	2161.4	3963.6	897.5
Maharashtra	22583.1	2419.7	13181.8	1283.0	7299.2	886.8
Manipur	18413.5	2689.0	14263.5	2186.5	3581.3	546.7
Meghalaya	11722	3730.0	6831	2518.0	2733	1248.0
Mizoram	4269	1324.0	1420	441.0	1462	476.0
Orissa	20006.6	4994.8	14820.1	4338.6	9046.6	3347.6
Pondicherry	58149.2	8422.0	27090.4	3897.3	30334.8	3867.3
Punjab	21135.8	3117.4	15099.6	2125.4	8938	1588.3
Rajasthan	21209.7	1371.3	14434.6	844.4	6873.7	1001.4
Sikkim	8564	960.0	5063	750.0	2261	150.0
Tamil Nadu	45401.9	6400.0	24478.9	3123.4	21369.5	4280.0
Tripura	15818.4	1800.0	11895.4	1407.8	4728.6	812.4
UP	27111.9	2654.2	19348.2	1862.8	10079.9	1471.2
Uttrakhand	16957.7	1793.3	11215.8	1286.7	5992.7	1272.0
West Bengal	91450.4	5799.5	48116.9	5348.5	16525.7	2267.0
Total	24787.2	3285.2	15569.4	1286.9	9258.7	1710.9

Clinical Turnover at Responding Institutes

The clinical load at the different institutions in relation to the Out patient area, In patient services and surgical turnover were analyzed. This provides an insight into the need for strengthening eye care facilities in the different specialties across the country and to identify the underserved areas.

On a national basis, the mean out patient clinical load per hospital per year was 24787 (Table 13). More than 60 percent of them are new out patient cases. The comparative mean Pediatric outpatient clinic load per hospital was 3285 patients. The outpatient load varied across the States and across hospitals within the State also.

It was observed that on an average, 9258 refractions were being done in a year by an institution. Among children the mean was 1710 refractions per year (Table 13).

Table 14a, 14b and 14c showed the reported ocular morbidity among the adults and pediatric patients. At the out patient clinics, refractive errors, cataract, conjunctivitis, Vitreo-retinal diseases, Disease of adnexa, Glaucoma, Retinopathy and Corneal Opacity were the most commonly reported morbidities among Adults. Among children the common Ocular morbidities reported were refractive error, conjunctivitis, disease of adnexa, cataract, squint Xerophthalmia, and Ocular trauma. Though there was a variation across institutions and States in terms of the average number of cases seen in a year, proportional morbidity due to the different causes appeared to be very similar. Trachoma cases were also reported in all age groups from a large number of institutes. Among adults majority of trachoma cases have been reported from Uttarakhand, Punjab, U.P, Gujarat, Rajasthan, Delhi, Haryana and Arunachal Pradesh. Among children more trachoma cases were reported from Arunachal Pradesh, Punjab, Uttarakhand, Gujarat and Madhya Pradesh. It was also interesting to see that ROP was reported in a significant number of institutions, of which the maximum cases were reported from Karnataka. It is also significant to observe that though vitamin A deficiency and other corneal opacities were recorded in many hospitals, the quantum of cases was lower than that recorded for vitreo retinal disorders in many hospitals.

Table 14a: Mean OPD Load (Adult and Pediatric Cases)

State	Mean cataract adult	Mean cataract pediatric	Mean refractive error adult	Mean refractive error pediatric	Mean Glaucoma Adult	Mean Glaucoma pediatric	Mean Disease adnexa adult	Mean Disease adnexa pediatric	Mean Ocular Trauma adult	Mean Ocular Trauma pediatric	Mean Squint Adult	Mean Squint pediatric
	N=559	N=320	N=554	N=358	N=519	N=193	N=391	N=220	N=475	N=296	N=459	N=300
Andhra Pradesh	4100.1	237.9	6838.7	1454.4	766.5	71.2	1186.4	359.2	321.6	72.5	510.3	100.1
Arunachal Pradesh	183.6	30.3	758.5	151.7	20.3	473.0	143.8	53.0	39	31.0	21.7	21.4
Assam	686.7	13.5	805	221.6	30.1	3.0	406.3	10.0	39.9	6.0	114.3	115.0
Bihar	3077.7	109.8	5609.1	860.5	289.3	202.2	511.9	143.3	118.4	26.2	70.2	40.2
Chandigarh	5102	-	11394	-	6636.5	-	1577	-	123.5	-	2615.5	
Chhattisgarh	1326.6	39.6	2380.5	716.1	108.9	12.9	297.6	148.1	140.1	86.3	60.4	32.0
Delhi	2490.4	125.4	12370.9	3330.3	715.7	71.0	1163	223.8	179.7	183.9	247.9	167.8
Goa	2907	5.0	6280	400.0	375.5	5.0	2596	10.0	2232	15.0	31	10.0
Gujarat	3000.8	95.1	8381.6	1990.0	266.6	53.4	920	183.2	213.2	167.6	323.2	669.8
Haryana	2942	76.6	5098	2048.9	299.4	7.9	491.4	444.3	224	77.9	227.5	80.4
Himachal Pradesh	1291.5	56.0	5169.2	1687.0	263.7	2.0	1874.3	-	131	33.0	174.6	129.5
J & K	5221	81.0	12582	1760.0	480	14.0	350	200.0	1700	1500.0	60	70.0
Jharkhand	1705.1	58.7	3550.4	601.9	194.3	15.8	610.3	184.8	92	49.3	31.5	42.8
Karnataka	2087.4	68.4	5803.9	2266.3	564.1	21.0	986.2	264.9	459.2	93.2	312.1	149.6
Kerala	4859.6	315.3	20595.3	6937.5	931.6	49.5	1454.8	105.0	1426.1	831.8	428.7	89.0
Madhya Pradesh	2864.2	86.5	5118.2	1621.4	249.6	45.3	409.1	122.7	139.8	62.8	88.1	72.0

Maharashtra	3780.6	596.1	5094.1	1037.0	432	118.2	711.7	45.2	260.9	58.6	235.9	142.8
Manipur	325.3	20.0	4424	438.7	30	-			407.5	164.0	20	7.0
Meghalaya	354.5	19.0	2447	1248.0	40	7.0	106	42.0	19	7.0	8	2.0
Mizoram	465	5.0	1591	645.0	14	-	130	70.0	2	-	9	24.0
Orissa	3680.2	110.0	5826.8	2447.0	276.4	5.8	345.2	39.2	188	50.8	110.9	60.4
Pondicherry	19975.4	192.0	22574.2	2566.0	1757.4	9.0	751.5	129.0	1177.8	120.3	261.2	168.8
Punjab	2248.7	67.2	6590.6	834.3	407.9	8.1	803.7	170.6	108.9	65.4	110.5	104.8
Rajasthan	2901.5	50.5	6315	776.3	389.2	7.5	299.7	139.0	238.5	23.7	95.1	115.0
Sikkim	112	4.0	611	1236.0	24	-	48	54.0	26	3.0		5.0
Tamil Nadu	10540.5	67.5	19108.5	2224.7	2109	22.6	1040.5	143.9	466.4	72.8	650.2	91.5
Tripura	2427.4	27.4	3743.4	791.2	313	4.0	1617	296.3	122.2	48.3	48.2	47.8
Uttar Pradesh	4243.5	139.8	7261.1	1527.3	532.7	200.0	601.1	127.2	230.9	51.4	117.8	58.6
Uttarakhand	962.4	73.3	3760.6	1617.1	304.6	19.0	454.7	145.4	77.4	34.1	55.9	61.4
West Bengal	7520	1405.0	15507.2	3828.0	1399.5	15.0	1946.5		1556.5	497.0	307.7	-
Total	3722.3	158.1	7520.8	1488.0	638.4	64.8	804.1	185.3	292.8	85.3	260.6	120.2

Table 14b: Mean OPD Adult and Pediatric Cases

State	Mean conjunct Adult	Mean conjunct pediatric	Mean uveitis Adult	Mean uveitis pediatric	Mean other CO adult	Mean other CO pediatric	Mean VR dis adults	Mean VR dis pediatric	Mean ROP pediatric	Mean other Retinop adult	Mean other Retinop pediatric
	N=491	N=323	N=444	N=197	N=431	N=255	N=379	N=132	N=105	N=230	N=101
AP	1135.6	268.1	299.1	16.3	425.9	55.9	746.9	142.4	34.8	774.7	48.5
Arunachal	285.9	203.8	18.6		53.6	31.3	30.8	2.0	4.0	12.0	2.0
Assam	232.5	16.6	193.8	40.5	123.3	150.0	351.8	23.0	2.5	285.0	21.0
Bihar	1656.5	499.8	286.1	84.6	154.8	35.9	252.5	6.4	7.5	339.4	170.0
Chandigarh	115	-	2847.5		350	-	12186		-	600.0	-
Chhattisgarh	500.4	288.0	79.1	38.5	126.9	60.8	405.6	51.8	4.2	165.9	84.2
Delhi	2067.2	818.6	124.5	28.0	612.6	110.3	864	17.5	15.0	135.3	14.0
Goa	1578	50.0	127	1.0	165	10.0	448	2.0	3.0	70.0	
Gujarat	1012.5	258.6	156.1	39.4	239.2	29.3	294.7	46.8	21.8	135.8	25.8
Haryana	2636.3	513.5	120.6	10.1	303.7	34.6	150.6	12.0	2.0	351.1	27.8
HP	2111.5	30.0	383.5	-	722.7	15.0	655	-	-	515.5	-
J & K	1680	1700.0	80	15.0	700	150.0	-	-	6.0	-	-
Jharkhand	650.1	270.5	150.4	27.0	174.5	30.8	327.6	18.1	15.9	281.1	24.1
Karnataka	880.3	463.8	296.2	45.3	442.7	115.9	944.6	21.3	184.2	1701.7	26.3
Kerala	2691	1489.8	398.4	46.3	708.5	51.5	1107.9	38.3	34.0	675.5	-
MP	1341.3	877.7	82.1	36.6	290.8	45.8	220.7	342.2	37.2	254.1	157.8
Maharashtra	874.5	223.8	152.5	64.2	271.5	64.9	535.9	16.8	12.2	578.5	28.5
Manipur	1655	1735.3	-	-	162	26.0	15	-	-	12.0	-

Meghalaya	1437	1102.0	9	3.0	11	2.0	4	-	-	9.0	2.0
Mizoram	108	118.0	10	1.0	30	13.0	-	-		44.0	11.0
Orissa	1027.4	163.3	313.3	11.4	264.3	23.0	302.6	6.0	6.0	171.4	9.7
Pondicherry	1336.8	650.8	564.2	30.8	1158.2	177.0	2526.8	18.7	4.7	4048.0	28.0
Punjab	1402.8	683.0	146.3	39.4	506.9	68.2	598	66.8	20.3	609.4	374.2
Rajasthan	1911.9	841.3	839.6	3.0	187.7	34.3	496.4	11.0	-	239.0	6.0
Sikkim	1198	605.0	31	2.0	-	3.0	22	-	-	22.0	-
Tamil Nadu	1419.9	479.8	580	31.7	2371.9	53.2	3703.5	128.9	89.6	1239.0	53.4
Tripura	1667.5	703.8	218.8	16.3	353.3	76.7	85.8	6.5		248.5	13.0
UP	2530.3	589.3	246.6	37.3	497.6	81.4	169.8	102.7	17.7	1372.0	36.7
Uttrakhand	783.6	363.6	139.3	13.3	218.2	23.9	516.8	10.8	43.0	153.6	13.2
West Bengal	2140	-	1657	-	3198.5	1142.0	17715.7	-	12.0	-	-
Total	1352.1	429.5	277.9	35.4	551.4	61.3	998.4	64.9	31.8	605.0	73.6

Table 14c: Mean OPD Adult and Pediatric Cases

State	Mean Ptosis adult	Mean Ptosis pediatric	Mean trachoma adult	Mean trachoma pediatric	Mean Pterygium adult	Mean Pterygium pediatric	Mean xerophtha adult	Mean xerophtha pediatric	Mean Amblyopia adult	Mean Amblyopia pediatric	Mean diagnosis NA adult	Mean diagnosis NA ped
	N=296	N=243	N=202	N=105	N=350	N=104	N=222	N=258	N=289	N=261	N=206	N=103
Andhra Pradesh	47.0	26.1	63.4	23.7	632.9	47.6	464.5	151.7	185.3	72.0	482.2	276.6
Arunachal Pradesh	3.7	2.0	271.7	384.5	74.0	4.0	4.0	72.0	6.3	9.3	30	-
Assam	13.0	3.0	21.0	28.0	43.6	16.5	14.5	127.3	49.0	57.0	383	14.0
Bihar	16.1	21.7	105.9	11.2	273.5	33.5	241.9	235.1	132.2	37.7	678.2	272.0
Chandigarh	20.0		10.0		50.0		10.0		24.0	-	235	
Chhattisgarh	19.2	19.6	107.0	51.8	256.8	61.4	101.1	86.3	72.8	47.4	547	75.3
Delhi	136.9	53.4	299.6	86.5	209.3	32.3	25.5	61.3	117.8	50.8	399.8	25.7
Goa	9.0	3.0	1.0		40.0			4.0	12.0	8.0	5005	
Gujarat	96.1	88.0	420.3	114.2	167.2	9.0	46.6	115.4	93.2	212.1	665.7	11.8
Haryana	83.0	7.0	294.1	53.7	410.7	27.6	91.2	18.1	178.5	35.8	1337.9	82.5
Himachal Pradesh	4.7	10.5	8.5	-	159.0	3.0	5.0	23.0	79.0	69.0	3364	-
Jammu & Kashmir	4.0	7.0	45.0	-	570.0	-		44.0	150.0	75.0	-	-
Jharkhand	39.5	14.2	22.8	5.0	265.0	35.2	125.9	45.3	85.4	91.9	98.1	131.3
Karnataka	104.9	17.4	40.3	18.6	794.9	43.4	129.0	322.9	114.2	97.3	636.8	213.6
Kerala	50.3	48.0	1.0		472.0	102.0	7.5	278.0	205.3	69.5	2846.4	12.0

Madhya Pradesh	12.2	9.3	102.9	102.5	204.2	23.6	57.6	54.2	76.5	59.8	559.8	85.6
Maharashtra	37.8	20.1	111.3	32.4	286.3	142.9	24.9	25.9	136.1	90.7	713	109.4
Manipur	121.0	8.0	-	-	212.0	23.0	-	10.0	26.0		-	-
Meghalaya	4.0	6.0	-	-	32.0	-	-	74.0	7.0	4.0	123	-
Mizoram	1.0	5.0	-	-	48.0	-	-		2.0	31.0	63	15.0
Orissa	62.0	13.5	165.8	77.5	176.8	2.5	128.2	74.2	171.0	64.2	932	175.7
Pondicherry	382.8	26.0	-	-	682.0	30.0	10.0	17.3	92.8	52.5	328	14.0
Punjab	21.6	16.4	615.4	311.7	274.5	2.0	176.3	42.2	140.0	70.6	693	686.5
Rajasthan	16.4	14.7	304.4	6.5	334.8	3.0	14.3	83.3	186.0	36.0	4786	269.0
Sikkim	-	-	-	5.0	-	2.0		3.0		6.0		-
Tamil Nadu	36.8	18.9	124.8	3.5	389.9	8.3	84.6	28.9	100.2	90.8	1364.6	673.3
Tripura	22.3	8.3	2.0	-	949.0	7.0	399.0	57.3	32.5	36.5	651.7	96.7
Uttar Pradesh	88.8	23.5	578.9	75.6	241.0	64.3	245.3	142.2	172.9	58.7	1349	198.5
Uttrakhand	44.8	7.4	694.8	135.9	286.8	20.8	64.7	72.5	102.2	93.3	51.2	5.0
West Bengal	-	-	-	-	-	-	112.0	615.0		352.0	88748	921.0
Total	53.1	23.1	263.1	88.1	357.4	41.0	151.3	93.3	128.2	76.1	2304.4	225.2

The average number of cataract surgery per hospital per year was 1568 surgeries (range: 1 to 47526) among the reported institutes. Manual SICS is practiced in all the states and is the commonest procedure used for cataract surgery (mean: 1554 surgeries per year) among the reported institutes. An average of 630 phaco surgeries for cataract was reported by 327 institutes. These were reported from all states other than Jammu & Kashmir, Mizoram and Sikkim. An average of 282 patients underwent YAG laser among the 274 reporting institutes. The other common surgeries among adults were laser trabeculectomy, refractive surgery, Vitreo retinal surgery and laser for retina.

Cataract and squint were observed to be the commonest surgical procedures in children in the country (Table 15, Table 16). Examination under anesthesia was another common procedure reported. Other procedures reported at the different hospitals included lid surgery, pediatric glaucoma, DCR, keratoplasty, ptosis and laser/ROP though the quantum of these surgeries was much lower than cataract or squint (Table 17). Training of pediatric eye care personnel needs to concentrate on improving the surgical skills of these conditions on a priority basis. It should be emphasized that though squint surgery would not make a dent on the bilaterally blind, people perceive it to be of concern and therefore there is a need to include squint surgical training in pediatric eye care courses even though a significant proportion of surgery may be among those aged 16+ years.

Table 15: Mean cataract surgery and YAG laser Adult

State	Mean cat surgery	Mean ICCE	Mean ECCE (non IOL)	Mean ECCE PC IOL	Mean phaco	Mean manual SICS	Mean YAG
	N=940	N=248	N=422	N=544	N=327	N=441	N=274
Andhra Pradesh	2657.8	160.9	67.4	1196.4	567.8	2026.2	355.3
Arunachal Pradesh	128.7	3	11.5	16.4	10	130.8	60
Assam	704.1	657	86	297	1159.5	1024.8	360.7
Bihar	689.9	162.2	31.1	289.4	60.7	826.4	33
Chandigarh	1216	3.5	7	147.5	1052	12	158.5
Chhattisgarh	1277.6	49.3	29.6	978.7	550	670.7	170
Delhi	1600.7	15.6	47.5	802	637.7	916.9	243.3
Goa	1410.5	10	84	266.5	402	896	266
Gujarat	727.7	4	36.5	965.1	402.1	1003.7	327.6
Haryana	983.6	119.3	120.1	809.3	198.1	467.5	142.7
Himachal Pradesh	542.7	5.7	35.8	191.6	382	510.8	107.3
Jammu& Kashmir	1633		60	1527	-	46	451
Jharkhand	508.1	176.3	22.6	103.2	382	434.1	95.4
Karnataka	1561.7	297	24.6	372.8	422.5	1243.7	227.6
Kerala	1840.2	9.7	22.1	284.2	317.9	1441.7	331.4
Madhya Pradesh	2549.6	124.5	154.4	1207.7	375.5	2315.7	155.5
Maharashtra	2162.9	108.9	44	925.5	692.7	982	255.6
Manipur	115.4	-	7	88.7	6	40.8	51.5
Meghalaya	278	-	1.5	250	47	6	17
Mizoram	441	-	-	14		427	-
Orissa	3567.8	3	54.4	983.8	1779	3068.3	450.5
Pondicherry	5557.2	2	192.3	463	1376	3969.8	401.3
Punjab	984.5	87.6	112	641.5	783.6	521.3	298.2
Rajasthan	1143.4	22	159.7	774	355.9	1682.9	169.4
Sikkim	49		1	-		48	-
Tamil Nadu	5134.5	39.7	63.3	942	1498.9	3906.4	544.7
Tripura	1557.8	3.5	20.3	905.3	160	590.5	27.3
Uttar Pradesh	1586.7	173.1	101.8	620.7	326.5	1485.2	159.4
Uttarakhand	791.8	12.3	60.6	248.9	337.1	671.7	111.7
West Bengal	5554.4	33.8	237.9	247.3	1937	7013.6	293
Total	1568.3	127.4	72.7	709.6	630.5	1554.0	282.6

Table 16: Distribution of other surgery (Adults)

State	Mean glaucoma	Mean trab	Mean laser trab	Mean squint	Mean lid surgery	Mean keratoplasty	Mean refractive surgery	Mean DCR/DCT	Mean VR surgery	Mean laser for retina	Mean others
	N=18	N=481	N=82	N=267	N=391	N=137	N=66	N=442	N=140	N=114	N=283
AP	24	50	45.2	61.4	44.7	141.6	154.5	73.5	335.1	849.6	319.1
Arunachal	-	7.5	-	17.5	40.5	-	-	9.7	-	-	57
Assam	-	47	-	32	59.2	28.3	-	40.8	289	3125	4.6
Bihar	-	17.6	-	14.2	12.5	4	3.5	14.2	8	2	303.3
Chandigarh	-	84.5	186.5	103.5	115.5	115	44	69	403	1011.5	416
Chhattisgarh	-	24.3	33	2.6	21.4	12.3	-	32.1	48	7000	44.1
Delhi	-	61.6	53.8	89.1	30	68.5	21.8	46.3	228.8	250.2	1134.6
Goa	-	13	-	5	-	-	-	135	206	-	65.5
Gujarat	34.4	49.5	10.2	52.6	54.6	82.2	43.5	42.2	133.9	580.8	25
Haryana	187.5	22.1	9.5	16.7	23	15.8	7	20.1	18	148.5	90.7
HP	-	51	10	42	29	-	-	44.6	-	-	80.4
J & K	-	38	-	10	7	-	-	40	-	-	-
Jharkhand	-	33.8	24.7	14.6	13	20	120	20.4	52.7	585	18.8
Karnataka	41	17.3	10	19.1	30.2	23.6	48	44.3	209.3	607.1	50.7
Kerala	-	81.8	65.6	82	51.1	25.2	36.5	23.2	227.5	1374.4	693.3
MP	12.5	82.5	11	17.5	35.7	4.8	400	48	44	268	2548.4
Maharashtra	6	34.9	121	27.5	37.1	35.8	188	64	238.5	511.7	262.7
Manipur	-	5	2	-	48	-	-	5	-	-	-
Meghalaya	-	7	-	2	14	5	-	5	-	10	20

Mizoram	-	9	-	8	7	-	-	-	-	-	39
Orissa	-	52	-	11	45.3	5	-	43.4	355	869	114.8
Pondicherry	-	72.4	178	12.8	100.8	41.7	9	161.4	166	1404.5	902.3
Punjab	10	39.3	40.1	23.4	15.6	146	369	10.6	143.1	625	155.4
Rajasthan	-	63.9	12	11.1	23.2	64.4	30	24.4	124.8	144.7	238
Sikkim	-	2	-	-	6	-	-	-	-	-	-
Tamil Nadu	10	249.8	595.3	449.7	144.6	167.5	343.6	196.4	669.7	2415.2	889.5
Tripura	-	14.3	-	2	9.3	1		45			36
UP	75	56.8	28.3	31.1	70.6	24.5	89.7	60	25.6	157.8	229.8
Uttrakhand	--	34.6	35.5	6.3	15.7	21.5	250	12.5	8	384	16
West Bengal	-	138.3	451	31	55	83.5	-	168	655	432	1991.4
Total	49.7	63.7	128.2	65.4	44.4	62.0	187.8	63.2	254.8	905.3	407.8

Table 17: Distribution of Ocular surgery (Pediatric)

State	Mean cataract surgery	Mean surgery Cong Glauc	Mean surgery Squint	Mean surgery Lid	Mean surgery Keratoplast	Mean surgery DCR/ DCT	Mean surgery Ptosis	Mean surgery Laser/ROP	Mean surgery Exam under Anesthesia	Mean surgery Other
	N=280	N=102	N=159	N=138	N=51	N=113	N=101	N=40	N=158	N=89
Andhra Pradesh	24.7	14.9	32.1	8.5	30.2	13.2	10.2	27.5	150.7	202.2
Arunachal Pradesh	8.0	-	3.0	24.0	-	2.0	-	-	5.0	-
Assam	24.5	5.0	2.0	14.0	1.0	1.0	2.0	-	2.0	18.0
Bihar	6.3	2.0	4.5	2.5	-	2.3	2.0	-	4.8	9.7
Chandigarh	29.0	1.0	32.0	13.0	-	2.0	4.0	9.0	11.0	-
Chhattisgarh	14.5	14.8	4.3	28.5	3.5	32.3	4.0	42.0	23.8	38.0
Delhi	67.1	22.7	75.3	13.6	10.4	19.1	8.0	38.1	181.8	145.9
Goa	5.0	2.0	-	-	-	1.0	-	-	5.0	-
Gujarat	24.4	13.6	30.7	21.3	5.7	15.3	12.6	4.0	41.9	70.0
Haryana	13.6	-	9.4	6.0	-	-	24.0	3.0	5.0	56.0
Himachal Pradesh	10.0	-	4.0		-	-	17.0	-	-	-
Jammu & Kashmir	48.0	7.0	6.0	3.0	-	-	3.0	10.0	30.0	2.0
Jharkhand	19.1	4.6	5.8	5.7	1.0	3.2	4.0	4.5	8.7	32.5
Karnataka	30.6	5.5	15.0	11.1	50.0	10.8	13.3	4.0	12.5	7.0
Kerala	54.3	26.0	94.3	120.7	5.0	22.0	13.8	60.0	27.3	35.3
Madhya Pradesh	88.6	3.0	77.3	16.0	-	17.0	11.3	46.5	19.5	491.8

Maharashtra	28.8	5.1	20.5	6.4	3.9	7.0	8.5	17.3	15.3	47.1
Manipur	2.0	-	-	4.0	-	-		-	2.0	-
Meghalaya	8.0	2.0	2.0	13.0	1.0	-	2.0	-	4.0	3.0
Mizoram	2.0	-	1.0		-	-	-	-	-	3.0
Orissa	60.0	1.0	5.0	11.0	2.0	-	-	-	19.0	7.0
Pondicherry	29.8	1.0	13.0	15.3	1.0	5.0	6.5	1.3	15.0	9.0
Punjab	15.1	3.0	21.4	6.3	-	11.2	11.3	19.0	15.1	10.3
Rajasthan	13.0	1.3	8.4	2.5	2.0	4.0	4.0	-	12.0	8.0
Tamil Nadu	59.2	118.6	99.5	23.4	10.2	12.4	21.7	24.8	77.9	598.2
Tripura	21.8	1.5	-	19.0	-	1.0	-	-	8.3	29.5
Uttar Pradesh	68.5	13.3	40.2	32.3	3.5	11.8	17.5	-	18.0	0.5
Uttrakhand	11.1	11.0	10.6	9.5	4.0	3.3	4.0	-	2.0	1.0
West Bengal	157.0	5.0	6.0	15.0	15.0	13.0	-	4.0	120.0	247.0
Total	32.4	17.9	34.2	13.9	9.1	10.8	10.6	23.4	52.9	120.7

Status of Equipment at Responding Institutions

The availability of equipment for eye care services including pediatric eye care was assessed (Table 18a, 18b, 18c). It was observed that functional slit lamp, Streak retinoscope, Direct Ophthalmoscope, Operating microscope, keratometer, refraction sets and A scan were available with majority of institutes. Pre verbal vision tests, B scan, Autorefractometers and Lensometers were not available in a significant proportion of institutions. Similarly cryo with pediatric probe, Boyle's apparatus, Pulse oxymeter and Vitrectomy machine were also not available in a significant proportion of hospitals.

Mean functional equipment in the responding institutions in each State showed that there was a wide variation across the States (Table 19a, 19b, 19c). This shows that those institutions having functional equipment were well stocked with such equipment. Streak retinoscopes, slit lamps, direct ophthalmoscope, refraction sets, and operating microscopes were the common pieces of equipment where institutions had more than 2 functional pieces of equipment on an average.

Considering the availability of all essential equipment for a pediatric ophthalmology unit, it was observed that there are 15 institutes in the country that may be classified as well equipped pediatric ophthalmology units.

Table 18a: Institutes responding on availability of functional equipment

State	Total Inst responded	Streak Retino scope	Slit lamp	Direct Ophthal moscope	Indirect Ophthal moscope	Refra ction set	Pediatric frame	A scan	B scan	Kerato meter	Lenso meter	Auto refracto meter	Operating Microscope
Andhra Pradesh	86	81	84	83	78	70	53	71	32	75	14	20	81
Arunachal	9	5	6	7	4	8	2	5	1	7	0	0	6
Assam	27	12	24	25	5	13	3	19	3	6	2	1	24
Bihar	58	49	48	45	33	49	30	39	18	48	2	21	48
Chandigarh	2	2	2	2	2	2	0	2	2	2	1	1	2
Chhattisgarh	29	19	24	26	18	27	14	19	4	19	0	5	22
Delhi	59	57	57	58	55	52	49	52	37	56	3	3	52
Goa	2	2	2	2	0	2	2	2	1	2	1	1	2
Gujarat	223	34	35	35	29	29	26	37	7	36	10	17	37
Haryana	42	33	39	39	20	31	19	32	6	35	2	2	38
HP	18	6	6	7	5	7	3	6	3	7	2	1	6
J & K	1	1	1	1	1	0	0	1	0	1	0	0	1
Jharkhand	40	34	36	35	23	40	23	27	19	39	0	19	39
Karnataka	28	26	28	27	23	26	13	24	10	27	12	12	25
Kerala	19	19	17	19	17	19	13	16	8	16	10	8	18
Madhya Pradesh	41	32	39	38	34	36	18	35	7	33	5	5	37
Maharashtra	51	49	50	50	48	47	43	48	26	48	11	15	49

Manipur	14	6	8	10	4	12	4	6	2	8	0	0	11
Meghalaya	2	2	2	2	2	2	1	2	0	2	0	2	2
Mizoram	1	1	1	1	1	1	1	1	0	1	0	0	1
Orissa	9	9	9	9	7	9	6	7	1	8	2	2	8
Pondicherry	6	6	6	6	5	5	3	6	3	6	2	2	6
Punjab	60	47	48	48	33	32	21	29	12	32	5	5	45
Rajasthan	50	38	41	40	28	34	14	39	7	37	8	5	41
Sikkim	1	1	1	1	1	1	0	0	0	1	0	0	0
Tamil Nadu	58	54	56	57	53	51	26	48	19	51	9	9	51
Tripura	5	4	5	5	3	0	4	5	1	5	0	5	5
Uttar Pradesh	67	54	60	60	46	62	27	49	12	53	17	13	60
Uttrakhand	37	34	32	33	25	18	19	29	6	33	0	1	34
West Bengal	8	6	6	8	7	8	3	5	4	6	3	4	6
Total	1053	723	773	779	610	693	440	661	251	700	121	179	757

Table 18b: Institutes responding on availability of functional equipment

State	Total Institute responded	Vitrectomy Machine	YAG laser	Argon Laser	Other laser	Goldman/ automated perimeter	Low Vision equipment	Applanation Tonometer	Fundus Camera	Synoptophore	Boyles apparatus	Pediatric Anesthesia equipment
Andhra Pradesh	86	43	48	20	6	38	13	15	17	12	11	32
Arunachal	9	0	3	0	0	0	0	0	1	1	1	1
Assam	27	3	3	1	5	2	1	2	3	4	1	3
Bihar	58	2	6	2	0	4	3	0	4	8	0	8
Chandigarh	2	2	2	1	1	2	2	1	2	2	1	2
Chhattisgarh	29	12	5	2	0	5	5	6	2	3	1	12
Delhi	59	40	28	18	6	26	24	4	29	28	3	20
Goa	2	0	1	0	0	1	0	1	0	0	2	1
Gujarat	223	14	24	5	5	11	8	8	7	9	12	17
Haryana	42	5	7	3	1	3	2	4	3	10	2	4
HP	18	1	6	0	0	2	1	2	0	1	2	0
J & K	1	0	1	0	0	0	0	0	0	1	0	0
Jharkhand	40	11	10	2	2	13	5	1	3	3	0	9
Karnataka	28	14	8	7	7	15	9	9	7	11	9	14
Kerala	19	11	11	4	3	11	4	10	7	6	9	8
Madhya Pradesh	41	22	17	4	3	12	5	4	5	9	5	6
Maharashtra	51	37	29	12	5	28	20	18	22	30	12	37
Manipur	14	0	2	1	0	1	0	0	1	0	0	1

Meghalaya	2	1	2	0	0	1	1	0	2	1	1	0
Mizoram	1	1	0	0	0	0	1	0	0	0	0	0
Orissa	9	6	4	0	0	1	1	3	1	1	1	2
Pondicherry	6	5	4	1	1	4	3	2	2	2	1	4
Punjab	60	17	19	14	6	15	8	4	16	13	4	14
Rajasthan	50	16	17	5	4	8	5	8	6	8	7	10
Sikkim	1	0	0	0	0	0	0	0	0	0	0	1
Tamil Nadu	58	31	29	13	11	26	16	14	16	16	11	23
Tripura	5	1	5	0	0	4	0	0	1	1	0	0
Uttar Pradesh	67	24	22	6	1	14	6	14	8	25	11	13
Uttrakhand	37	10	12	2	2	11	1	2	4	11	1	6
West Bengal	8	3	4	1	2	4	3	3	3	3	6	5
Total	1053	332	329	124	71	262	147	135	172	219	114	253

Table 18c: Institutes responding on availability of functional equipment

state	Total Institute responded	Monitor Pulse oxymeter	Laser diode	Cryo	Ped probes for cryo	VER/ ERG/ EOG	OCT	Tono meter	Non contact tonometer	Colour Vision test	Pre verbal Vision test	CT/ MRI
Andhra Pradesh	86	41	11	41	16	6	3	55	14	65	12	20
Arunachal	9	2	0	1	0	0	0	4	0	7	0	1
Assam	27	4	1	2	2	1	1	22	1	22	22	2
Bihar	58	8	1	26	9	1	2	28	17	49	5	6
Chandigarh	2	2	0	1	0	2	0	1	0	1	0	1
Chhattisgarh	29	12	3	9	2	2	0	10	1	24	1	2
Delhi	59	25	21	26	9	23	9	41	19	51	10	13
Goa	2	2	1	1	0	0	0	1	0	1	0	0
Gujarat	223	17	5	10	5	0	1	11	5	25	4	4
Haryana	42	6	0	9	3	0	0	17	1	27	2	7
HP	18	0	0	1	0	0	0	2	1	3	0	0
J & K	1	0	0	0	0	0	0	0	1	1	0	0
Jharkhand	40	12	2	25	11	3	7	23	13	37	3	9
Karnataka	28	19	2	7	3	5	1	7	1	13	2	5
Kerala	19	10	2	6	2	2	0	5	2	6	1	4
Madhya Pradesh	41	8	2	15	3	4	2	15	5	21	6	2
Maharashtra	51	42	14	32	15	7	1	31	11	41	8	26

Manipur	14	1	0	0	0	0	0	6	1	10	0	0
Meghalaya	2	1	0	2	0	0	1	0	1	2	0	0
Mizoram	1	1	0	1	0	0	0	1	0	1	0	0
Orissa	9	1	0	5	2	0	0	2	2	7	1	1
Pondicherry	6	4	0	5	1	1	1	3	4	6	2	2
Punjab	60	19	11	17	7	2	3	17	8	26	4	8
Rajasthan	50	12	4	8	4	2	0	9	4	11	4	2
Sikkim	1	1	0	0	0	0	0	1	0	1	0	1
Tamil Nadu	58	35	5	30	7	9	8	31	15	42	15	15
Tripura	5	0	0	1	0	0	0	2	0	3	0	0
Uttar Pradesh	67	16	1	21	6	0	0	22	11	35	4	4
Uttrakhand	37	6	1	12	5	0	1	15	7	32	4	1
West Bengal	8	5	1	2	1	0	1	1	1	2	0	0
Total	1053	312	88	316	113	70	42	383	146	572	110	136

Table 19a: Mean number of functional equipment per institute

State	Streak Retinoscope	Slit lamp	Direct Ophthalmoscope	Indirect Ophthalmoscope	Refraction set	Pediatric frame	Auto refractometer	A scan	B scan	Kerato meter	Lenso meter	Operating Microscope
	N=723	N=773	N=779	N=610	N=693	N=441	N=179	N=661	N=251	N=700	N=121	N=757
Andhra Pradesh	3.1	4	3.7	2.3	4.4	2.8	1.8	1.4	1.2	1.7	1.5	2.3
Arunachal	1.2	1.8	1.4	1	1.5	1	-	1	1	1.1	-	1.3
Assam	5.2	3.1	2.9	6.4	5.2	16.7	5	1.1	1.7	1.2	3	1.9
Bihar	1.4	1.5	2	1.1	2.1	1.2	1	1.1	1	1.2	1	1.4
Chandigarh	4	11	9	9	6.5		2	2	1	2.5	4	3
Chhattisgarh	2.3	1.8	2	1.4	2.8	1.6	1.2	1.4	1	1.3		2
Delhi	3.4	4	4.2	2.5	4.5	1.8	1.3	1.5	1.4	1.7	3	2.4
Goa	1.5	3.5	3.5	-	4	1.5	1	1.5	1	1.5	1	2
Gujarat	2.3	3.3	3.1	2.9	4.9	2	2	1.4	1.3	1.6	2	2.8
Haryana	1.3	1.5	1.6	1.5	1.9	1.8	1	1.2	1.2	1.2	1	1.4
HP	2.7	3	4.3	1.4	3.1	1.7	1	1.5	1	1.6	1.5	1.5
J & K	8	6	16	2	-	-	-	2	-	3	-	3
Jharkhand	1.5	1.5	1.9	1.4	2.1	1.2	1.1	1.1	1	1.2	-	1.5
Karnataka	2.9	3.8	3.6	3.3	4.7	3.3	1.3	1.3	1.1	1.5	1.3	2.2
Kerala	4.6	5.4	4.8	4.5	6.6	1.2	1	1.4	1.1	1.6	1.7	2.3
Madhya Pradesh	1.9	2.6	2.7	1.7	3.1	1.5	1	1.3	1	1.3	1	1.9
Maharashtra	3.4	4.2	4.3	2.6	5.2	2.4	1.3	1.8	1.1	1.6	2.2	2.9

Manipur	1	1	2.2	1	1.3	1	-	1.2	1	1	-	1.1
Meghalaya	3.5	1.5	5	1.5	4	2	1	2		1.5	-	1.5
Mizoram	3	3	3	2	3	1	-	1		1		2
Orissa	2.3	3.4	3.1	2.6	3.3	1.3	2	1.4	1	2.1	1	2.4
Pondicherry	5.5	6.7	5.7	3	7.6	2	2	1.5	1.3	1.8	1	2.7
Punjab	1.8	2	2.5	1.8	2.6	1.3	1	1.4	1.1	1.4	1.6	1.5
Rajasthan	2.4	2.3	2.8	2	2.6	2.1	2	1.5	1.1	1.4	2.9	1.9
Sikkim	1	2	3	1	2	-	-	-	-	1	-	-
Tamil Nadu	5.8	9.3	5.5	3.5	8	3.1	2.1	1.7	1.2	2	1.9	3.4
Tripura	1.5	2.4	4.2	7	-	1.8	1.6	1.6	1	1.4		2.4
Uttar Pradesh	2.1	3.2	2.4	1.5	2.8	1.4	1.1	1.2	1	1.4	1.5	1.9
Uttrakhand	1.7	1.6	1.7	1.3	1.8	1.4	2	1.2	1	1.2		1.4
West Bengal	2.8	8.3	10.4	3.9	5.9	2	2.3	2.4	1	1.8	3	5.2
Total	2.7	3.4	3.3	2.3	3.8	2.0	1.4	1.4	1.1	1.5	1.8	2.1

Table 19b: Mean number of equipment per institute

State	Vitreotomy Machine	YAG laser	Argon laser	Other laser	Goldman/automated perimeter	Low Vision equipment	Applanation Tonometer	Fundus Camera	Synoptophore	Boyles apparatus	Pediatric Anesthesia equipment
	332	N=329	N=124	N=63	262	147	135	172	219	114	253
Andhra Pradesh	1.4	1	1.1	1	2.4	1.2	2.7	1.2	1.3	1.6	1.5
Arunachal Pradesh	-	1	-	-	-	-	-	1	1	1	2
Assam	2	1.3	1	5	1.5	15	15.5	1.3	1	3	1
Bihar	1	1.2	1	-	1	1.3	-	1	1	-	1.4
Chandigarh	2	1.5	1	1	1	1	16	1	1	2	1
Chhattisgarh	1.1	1	1	-	1	1.4	1	1	1	1	1.1
Delhi	1.6	1.2	1.3	1	1.3	1.7	2.5	1.3	1.6	1.7	1.4
Goa	-	1	-	-	1		1			1.5	2
Gujarat	1.4	1.1	1	1	1.3	1.5	1.1	1.1	1.4	1.3	1.1
Haryana	1	1	1	1	1	3.5	1	1	1.1	1	1
Himachal Pradesh	2	1	-	-	1	1	1	-	1	3	-
Jammu & Kashmir	-	2	-	-	-	-	-	-	1	-	-
Jharkhand	1.2	1	1	1	1.2	1	2	2.7	1.7	-	1.1
Karnataka	1.4	1	1.3	1.4	1	1.1	2.3	1.3	1.3	1.6	1.6
Kerala	1.4	1.2	1	1	1.1	1	3.9	1	1	1.2	1.4
Madhya Pradesh	1.1	1	1	1	1.1	1	1.5	1.2	1.2	1	1.2
Maharashtra	1.4	1.4	1.9	1.3	1.1	2.1	2.4	1.1	1.1	1.8	1.2

Manipur	-	1	1	-	1	-	-	1	-	-	1
Meghalaya	1	1	-	-	1	1	-	1	1	1	-
Mizoram	1	-	-	-	-	5	-	-	-	-	-
Orissa	1.7	1	-	-	1	2	5	1	1	1	1
Pondicherry	1.8	1	1	1	1	1	4	1.5	1	1	1
Punjab	1.3	1.1	1.1	1	1.1	2.1	1.8	1.1	1.5	1.3	1.1
Rajasthan	1.3	1.1	1	1.3	1.3	2.4	2.3	1.2	1.4	1.3	1.2
Sikkim	-	-	-	-	-		-			-	1
Tamil Nadu	1.7	1.3	1.3	1	1.3	3.8	5.1	1.4	1.4	2.4	1.7
Tripura	1	1.2	-	-	1.3	-	-	1	1	-	-
Uttar Pradesh	1.2	1	1	1	1.2	1.3	1.6	1	1.6	1.3	1.1
Uttrakhand	1.4	1	1	1	1	1	1	1	1.1	1	1.2
West Bengal	4	1.3	2	1	2.5	2	3.3	1.3	1.3	2.3	2.2
Total	1.4	1.1	1.2	1.1	1.4	1.9	2.9	1.2	1.3	1.6	1.3

Table 19c: Mean number of equipment per institute

State	Monitor Pulse oxymeter	Laser diode	Cryo	Ped probes for cryo	VER/ ERG/ EOG	OCT	Tono meter	Non contact tonometer	Colour Vision test	Pre verbal Vision test	CT/ MRI
	N=312	N=65	N=316	N=113	N=70	N=42	N=383	N=146	N=572	N=110	N=136
Andhra Pradesh	2.3	1.6	1.5	1.4	1	1.0	2.3	1.4	2.6	4.6	1.2
Arunachal	1	-	1.0	-	-	-	1.8	-	1.3	-	1.0
Assam	2.5	1.0	1.0	1.5	1	1.0	1.2	1.0	1.1	1.0	1.0
Bihar	1.6	1.0	1.3	1.0	1	1.0	1.2	1.1	1.3	1.0	1.0
Chandigarh	1	-	1.0		1	-	5.0	-	2.0		1.0
Chhattisgarh	1.2	1.0	1.0	1.0	1	-	1.2	1.0	1.5	2.0	1.5
Delhi	3.6	1.8	1.5	1.4	1.6	1.2	2.2	1.6	2.1	3.4	1.0
Goa	1.5	1.0	1.0		-		6.0	-	3.0	-	-
Gujarat	1.6	1.3	1.1	1.2	-	1.0	1.7	1.6	1.5	1.5	1.5
Haryana	1.2	-	1.0	1.7	-		1.6	1.0	1.6	1.0	1.0
Himachal Pradesh	-	-	1.0	-	-		1.5	1.0	1.0	-	-
J & K	-	-	-	-	-			2.0	2.0	-	-
Jharkhand	1.3	1.0	1.1	1.0	1	1.0	1.3	1.1	1.4	1.0	1.8
Karnataka	2.4	1.0	1.3	1.3	1	1.0	2.3	1.0	1.9	1.0	1.2
Kerala	2.3	1.0	1.2	1.0	1		2.4	1.0	1.7	1.0	1.0
Madhya Pradesh	1.1	1.0	1.1	1.0	1	1.0	1.7	1.2	1.4	1.3	1.0

Maharashtra	2	1.2	1.2	1.1	1.3	1.0	2.4	3.8	2.1	2.4	1.1
Manipur	1	-	-	-	-	-	1.0	1.0	1.1	-	-
Meghalaya	1	-	1.0	-	-	1.0	-	2.0	4.0	-	-
Mizoram	1	-	1.0	-	-	-	3.0	-	1.0	-	-
Orissa	1	-	1.6	1.5	-	-	1.5	1.0	1.3	1.0	1.0
Pondicherry	1.5		1.4	1.0	1	1.0	1.0	1.5	1.8	1.0	1.5
Punjab	1.2	2.8	1.2	1.4	1	1.0	2.5	1.6	1.7	1.0	1.3
Rajasthan	1.4	1.0	1.8	1.3	1	-	1.2	1.0	2.2	1.0	1.0
Sikkim	1	-	-	-	-	-	2.0	-	1.0		1.0
Tamil Nadu	2.1	1.0	1.4	1.0	1	1.0	2.5	1.7	2.5	4.9	1.1
Tripura	-		2.0	-	-	-	1.0	-	1.7	-	-
Uttar Pradesh	1	1.0	1.3	1.0	-	-	1.3	1.1	1.3	2.3	1.0
Uttrakhand	1	1.0	1.2	1.0	-	1.0	1.7	1.4	1.3	1.0	1.0
West Bengal	1.8	1.0	1.5	1.0	-	1.0	4.0	1.0	1.5	-	-
Total	1.9	1.4	1.3	1.2	1.2	1.0	1.9	1.5	1.8	2.3	1.2

Community Perceptions on Pediatric Blindness

The FGD conducted constituted parents of children with visual impairment. It was evident that there is a lack of awareness on pediatric blindness in the community (Table 20). Parents were anxious about social stigma and gender issues in relation to the visually impaired children.

Table 20

Salient statements of parents of visually impaired children mentioned in FGD

Domain	Statements
Causes of the Visual Impairment	<ul style="list-style-type: none"> - Child was admitted in ICU and that was the reason - Cannot understand as both parents are fine - My wife was exposed to solar eclipse when she was pregnant and that was the reason why the child became blind - My wife lay on the floor when she was pregnant and the fetus got injured - He suffered from red eye when he was 5 months old and I think that was the cause - Watching excess television - Poor nutrition in childhood
Concerns on life events	<ul style="list-style-type: none"> - Child has problem to move around like going to toilet and he cannot do this at all at night - My daughter remains depressed - She is not capable to play like other children - My daughter feels embarrassed - My daughter does not go to marriage parties - She is an introvert - School had denied giving admission due to his vision problem - School administration has terminated my daughter from their school after the admission because her eye disease
Social concerns	<ul style="list-style-type: none"> - We are embarrassed because of what people will think due to our blind daughter - Nobody wants to marry our daughter - Now he is a child, but we are tense about his future - Government should reach at rural areas and provided good education and other benefits to these children

Pediatric Eye Care – Profile of the Government sector

One of the major objectives of the study was to highlight the existing services and identify the existing gaps for pediatric eye care in the Government sector in India. For the purpose of the analysis, all government hospitals including the medical colleges and secondary level hospitals and the hospitals run by public sector undertakings like the ESI, Railways, Defence Services, SAIL, CCL, HEC etc. were also categorized as government as the funding for all of these is from the public sector.

Very few hospitals in the government sector responded to the questions related to pediatric eye care. It is likely that this was because of a lack of organized pediatric eye care facilities in the Government sector unlike the NGO sector which has made immense progress in pediatric eye care in the country. Only a total of 8 trained pediatric ophthalmologists were reported to be working in the Govt. sector (Table 21). In addition there were 13 pediatric oriented ophthalmologists who had undergone a short orientation. As against this, 86 government hospitals reported that 324 ophthalmologists working in these hospitals actually performed pediatric surgery. Therefore there is an urgent need to train these surgeons adequately to improve the overall quality of pediatric eye care in the country.

Many government hospitals reported having access to neonatologists and anesthetists (Table 22). This is to be expected as many of the medical colleges in the country are in the government sector. However what proportion of time these skilled personnel actually allocate to eye care related tasks is not known.

There was a complete lack of specifically trained pediatric nurses, optometrists and counselors in the government sector. Pediatric eye care needs a comprehensive pediatric team to deliver services and there is not a single government institution that had a trained complement of staff to constitute a pediatric eye care team.

Only 4.2% of the government hospitals had a separate dedicated pediatric unit among the 285 responding hospitals (Table 23). A dedicated pediatric ward was reported by 13.6% of the government hospitals while 18.9 % provided for a dedicated out patient clinic for children. There were wide variations across the States. This is important to be considered as health is a state subject in India.

Table 21: Pediatric eye care facilities in the government sector

State	Responding Institutes (N)	Total pediatric OS	Mean pediatric OS	Total pediatric oriented OS	Mean pediatric oriented OS	Total other OS (responded)	Mean other ophthal
Andhra Pradesh	1	-	-	1	1	11(4)	2.7
Arunachal	-	-	-	-	-	4 (1)	4
Assam	-	-	-	-	-	13 (1)	13
Bihar	-	-	-	-	-	6 (3)	2
Chandigarh	1	-	-	1	1	5 (1)	5
Chhattisgarh	-	-	-	-	-	9 (5)	1.8
Delhi	2	3	1.5	2	1	77 (14)	5.5
Gujarat	1	1	1	3	3	-	-
Haryana	-	-	-	-	-	13 (2)	6.5
HP	-	-	-	-	-	2 (2)	1
J & K	-	-	-	-	-	5 (1)	5
Jharkhand	-	-	-	-	-	3 (1)	3
Karnataka	-	-	-	-	-	3 (2)	1.5
Kerala	1	-	-	3	3	30 (2)	15
MP	-	-	-	-	-	9 (4)	2.2
Maharashtra	1	-	-	1	1	29 (9)	3.2
Manipur	-	-	-	-	-	6 (1)	6
Meghalaya	-	-	-	-	-	3 (2)	1.5
Pondicherry	-	-	-	-	-	7 (2)	3.5
Punjab	-	-	-	-	-	25 (8)	3.1
Tamil Nadu	1	3	3	1	1	20 (2)	10
Tripura	-	-	-	-	-	2 (1)	2
Uttar Pradesh	-	-	-	-	-	11 (4)	2.7
Uttrakhand	-	-	-	-	-	2 (2)	1
West Bengal	1	1	1	1	1	22 (1)	22
Total	5	8	1.6	13	2.6	324 (86)	3.8

Table 22: Other available specialists to support pediatric eye care in government hospitals

State	Ped neona Total	Ped neona Mean	Ped anaesth total	Ped anaesth Mean
Andhra Pradesh	18 (6)*	2	3(3)*	1
Assam	5 (1)	5	2 (1)	2
Bihar	8 (4)	2	1(1)	1
Chhattisgarh	18 (11)	1.6	3(2)	1.5
Delhi	33 (7)	4.7	9 (4)	2.2
Gujarat	10 (1)	10	4 (3)	1.3
Haryana	3 (2)	1.5	1(1)	1
Jharkhand	5 (3)	1.7	3(2)	1.5
Karnataka	1 (1)	1	1(1)	1
Madhya Pradesh	1 (1)	1	1(1)	1
Maharashtra	40 (10)	4	10 (5)	2
Pondicherry	2 (2)	1	1(1)	1
Punjab	12 (8)	1.5	11(4)	2.7
Tamil Nadu	11 (4)	2.7	-	-
Tripura	1 (1)	1	-	-
Uttar Pradesh	3 (2)	1.5	1(1)	1
Uttarakhand	2 (1)	2	-	-
West Bengal	-	-	1(1)	1
Total	173 (74)	2.3	52 (31)	1.7

* Figures in parenthesis indicate number of responding hospitals

Table 23: Pediatric service delivery parameters in Govt. hospitals

State	Separate pediatric Unit (%)	Separate pediatric Ward (%)	Separate pediatric OPD (%)	Total
Andhra Pradesh	0	4(17.4%)	3 (13.6%)	22
Arunachal Pradesh	0	0	1 (14.3%)	7
Assam	0	0	0	22
Bihar	1 (2.4%)	3 (7.3%)	4 (9.8%)	41
Chandigarh	0	0	1 (100%)	1
Chhattisgarh	0	2 (11.1%)	5 (27.8%)	18
Delhi	3 (14.3%)	4 (19.0%)	8 (40%)	20
Goa	0	0	0	1
Gujarat	2 (10.5%)	3 (15.8%)	4 (21%)	19
Haryana	1 (8.3%)	1 (8.3%)	3 (25%)	12
Himachal Pradesh	0	0	0	13
Jammu & Kashmir	1(100%)	0	1 (100%)	1
Jharkhand	0	3 (13.6%)	3 (13.6%)	22
Karnataka	0	1 (25%)	1 (25%)	4
Kerala	0	0	0	2
Madhya Pradesh	0	3 (16.7%)	3 (16.7%)	18
Maharashtra	0	4 (28.6%)	5 (35.7%)	14
Manipur	0	0	0	9
Meghalaya	0	0	1 (50%)	2
Mizoram	-	-	-	0
Orissa	0	0	0	1
Pondicherry	1 (33.3%)	2 (66.7%)	1 (33.3%)	3
Punjab	0	2 (22.2%)	3 (30%)	9
Rajasthan	-	-	-	0
Sikkim	-	-	-	0
Tamil Nadu	1 (12.5%)	4 (50%)	4 (50%)	8
Tripura	0	0	0	2
Uttar Pradesh	1 (7.1%)	1 (7.1%)	1 (7.1%)	14
Uttrakhand	0	1 (12.5%)	1 (12.5%)	8
West Bengal	1 (100%)	1 (100%)	1 (100%)	1
Total	12 (4.2%)	39 (13.6%)	54 (18.9%)	285

Table 24: Availability of dedicated pediatric beds in the Government sector

State	Responded	No. beds	Mean Ped eye bed/ hospital
Andhra Pradesh	1	10	10
Arunachal Pradesh	1	10	10
Assam	0		
Bihar	1	1	1
Chandigarh	0	-	-
Chhattisgarh	1	2	2
Delhi	1	36	36
Goa	0		
Gujarat	2	12	6
Haryana	1	40	40
Himachal Pradesh	0	-	-
J & K	0	-	-
Jharkhand	1	15	15
Karnataka	0	-	-
Kerala	1	10	10
Madhya Pradesh	1	20	20
Maharashtra	1	10	10
Manipur	0	-	-
Meghalaya	0	-	-
Mizoram	0	-	-
Orissa	0	-	-
Pondicherry	1	1	1
Punjab	1	4	4
Rajasthan	0	-	-
Sikkim	0	-	-
Tamil Nadu	1	30	30
Tripura	0	-	-
Uttar Pradesh	1	12	12
Uttarakhand	1	1	1
West Bengal	1	10	10
Total	18	214	11.9

Table 25: Pediatric OT facilities in the Government sector

State	No. responded	No of OT tables for ped cases	Mean Ped OT tables/hospital	Mean hrs Ped OT/week	Daily Ped OT (Responded)	Ped OT at least once a / Week (Responded)
Andhra Pradesh	-	-	-	24	1 (1)	0(1)
Arunachal	1	1	1	12	-	0(1)
Assam	-	-	-	-	1(3)	2 (3)
Bihar	1	1	1	2.5	1 (2)	1(2)
Chandigarh	-	-	-	-	0 (1)	1 (1)
Chhattisgarh	3	4	1.3	4.3	0 (3)	3(3)
Delhi	2	7	3.5	10	0 (4)	4(4)
Goa	1	1	1	4	0 (1)	1(1)
Gujarat	1	2	2	4.7	2 (8)	6(8)
Haryana	1	1	1		0 (2)	2(2)
HP	-	-	-	-	-	-
J & K	-	-	-	-	1 (1)	0(1)
Jharkhand	-	-	-	24	-	-
Karnataka	-	-	-	-	-	-
Kerala	1	1	1	36	1 (2)	1(2)
Madhya Pradesh	2	3	1.5	-	-	-
Maharashtra	4	9	2.2	6	4(5)	1(5)
Manipur	-	-	-	-	-	-
Meghalaya	-	-	-	-	0(1)	1(1)
Mizoram	-	-	-	-	-	-
Orissa	-	-	-	-	-	-
Pondicherry	1	1	1	4	1(2)	1(2)
Punjab	3	5	1.6	-	1(3)	2(3)
Rajasthan	-	-	-	-	-	-
Sikkim	-	-	-	-	-	-
Tamil Nadu	-	-	-	-	1(1)	0(1)
Tripura	-	-	-	3.5	0(1)	1(1)
Uttar Pradesh	2	3	1.5	3	1(2)	1(2)
Uttrakhand	-	-	-	-	1(2)	1(2)
West Bengal	1	3	3	-	1 (1)	0(1)
Total	24	42	1.7	8.3	17 (46) 37%	29(46) 63%

Only 18 hospitals reported on the pediatric beds availability in the government sector (Table 24). A total of 214 dedicated beds for children were available across the entire public sector hospitals in the country. Though the mean pediatric beds was 11.5/ responded hospital, this observation should be interpreted with caution as only 18 hospitals responded and there was a wide variation on the reported bed availability across the States and also between hospitals in the same State.

Only 42 OT tables were available for pediatric cases at the responding government hospitals (Table 25). The mean of 1.7 OT tables/ hospital should also be interpreted with caution due to the few reporting hospitals. 63% of the responding hospitals provided OT access for children at least once a week while 37% had the OT made available for children on a daily basis. The availability of OT for children was poor with the OT being available for only 8.3 hours every week in India. There was wide variation across the States from which responses were obtained. Pediatric surgery is a time consuming process and 8 hour availability (one working day) would mean 6-8 pediatric surgical procedures on a given working day.

Eighty percent of the respondent hospitals provided a daily outpatient clinic for children even if it were not a dedicated 'children-only' service (Table 26). A system where there is no separate entity dedicated to children generally fails to meet the requirements of the pediatric population as they have their own special needs which are different from adults. The parents of such children also need support and counseling and children need to be engaged with provision of 'play-areas' and a colorful friendly environment.

The observations show that the government needs to consider strengthening the pediatric eye care services within the public funded institutions in the country. Using the expertise available at leading NGO hospitals in the country and tapping sources for supply of equipment and support for the infrastructure are necessary if the elimination of avoidable blindness in India is to be a reality by 2020. Most of the NGO institutions are located in the South and West of India and there is complete lack of skilled human resources and infrastructure in most of North and East of India where the communities seek solace from public funded institutions in their quest for quality eye care.

Table 26: Frequency of Pediatric Eye OPD in public sector hospitals

State	Pediatric Eye OPD			
	Daily (%)	3-5 day/wk (%)	1-2 Day/Wk (%)	Institutions responded
Andhra Pradesh	12 (92.3)	1 (7.7)	0	13
Arunachal Pradesh	4 (100.0)	0	0	4
Assam	1 (33.3)	2 (66.7)	0	3
Bihar	26 (92.9)	1 (3.6)	1 (3.6)	28
Chandigarh	0	0	1 (100.0)	1
Chhattisgarh	7 (87.5)	1 (12.5)	0	8
Delhi	6 (40.0)	7 (46.7)	2 (13.3)	15
Goa	-	-	-	-
Gujarat	8 (57.1)	6 (42.9)	0	14
Haryana	7 (77.8)	2 (22.2)	0	9
Jammu & Kashmir	0	0	1 (100.0)	1
Jharkhand	17 (100.0)	0	0	17
Karnataka	2 (66.7)	1 (33.3)	0	3
Kerala	2 (100.0)	0	0	2
Madhya Pradesh	9 (90.0)	1 (10.0)	0	10
Maharashtra	10 (90.9)	1 (9.1)	0	11
Manipur	2 (100.0)	0	0	2
Meghalaya	1 (100.0)	0	0	1
Pondicherry	1 (100.0)	0	0	1
Punjab	4 (100.0)	0	0	4
Tamil Nadu	4 (80.0)	0	1 (20.0)	5
Tripura	3	1	0	4
Uttar Pradesh	4 (66.7)	1 (16.7)	1 (16.7)	6
Uttarakhand	5 (100.0)	0	0	5
West Bengal	0	1 (100.0)	0	1
Total	135 (80.4)	26 (26.5)	7 (4.2)	168

Table 27: Clinical load (pediatric) at Government hospitals

state	Mean total pediatric OPD	Mean pediatric New OPD	Mean Pediatric refractions
	N=211	N=210	N= 221
Andhra Pradesh	2219.6	1615.7	1449.6
Arunachal	391.3	267.0	46.0
Assam	174.2	146.7	52.0
Bihar	2622.7	2114.0	691.1
Chhattisgarh	2570.3	1665.3	795.8
Delhi	11570.7	6141.1	3403.8
Gujarat	3452.5	1968.3	1947.4
Haryana	6327.3	4919.9	4028.8
Himachal Pradesh	5618.3	3517.7	1350.7
J & K	5622.0	.-	1760.0
Jharkhand	2440.8	1917.0	830.1
Karnataka	2295.0	1740.0	2660.0
Kerala	75000.0	50000.0	23100.0
Madhya Pradesh	2250.0	1871.2	733.0
Maharashtra	1180.2	855.7	619.4
Manipur	2689.0	2186.5	546.7
Orissa	1150.0	1070.0	110.0
Pondicherry	8090.0	2530.0	1800.0
Punjab	3333.3	2757.0	1343.0
Sikkim	960.0	750.0	150.0
Tamil Nadu	5019.9	2721.6	4213.9
Tripura	2152.5	1681.8	1005.0
Uttar Pradesh	4288.1	2904.9	2772.2
Uttrakhand	1493.0	1206.3	905.6
West Bengal	8787.0	8787.0	3690.0
Total	3225.4	2226.4	1516.9

Table 28: Distribution (mean values) of pediatric surgery at different government hospitals

State	Pediatric cataract	Congenital Glaucoma	Squint	Lid	Kerato plasty	DCR/ DCT	Ptosis	Laser/ROP	Exam under Anesthesia	Others
	N=104	N=36	N=49	N=59	N=18	N=48	N=34	N=11	N=53	N=35
Andhra Pradesh	11.8	.	2.3	2.8	.	3.4	2.0	.	10.0	7.3
Assam	39.0	5	2.0	14.0	.	1.0	2.0	.	2.0	18.0
Bihar	8.0	2	5.0	2.6	.	2.3	2.0	.	4.3	10.5
Chandigarh	29.0	1	32.0	13.0	.	2.0	4.0	9	11.0	.
Chhattisgarh	21.0	27	3.0	28.5	1	46.5	4.0	.	13.5	38.0
Delhi	75.3	30.1	97.4	11.9	14.8	11.9	8.4	27	269.7	168.0
Goa	5.0	2	.	.	.	1.0	.	.	5.0	.
Gujarat	23.9	31.3	41.9	32.5	7.3	16.8	14.3	.	28.0	57.2
Haryana	23.3	.	16.0	4.0	.	.	38.0	5	5.0	56.0
Himachal Pradesh	10.0	.	4.0	.	.	.	17.0	.	.	.
Jammu & Kashmir	48.0	7	6.0	3.0	.	.	3.0	10	30.0	2.0
Jharkhand	9.5	2	4.0	4.2	.	2.0	3.0	.	3.5	36.0
Karnataka	40.3	8	26.0	19.5	50	12.0	25.0	.	6.0	.
Kerala	106.0	50	185.0	350.0	5	22.0	26.0	60	52.0	95.0
Madhya Pradesh	12.3	1	.	13.8	.	1.0	1.0	.	4.0	7.0
Maharashtra	14.6	4.7	7.8	7.7	2	5.4	5.0	.	12.1	13.0
Manipur	2.0	.	.	4.0	.	.	.	.	2.0	.
Orissa	.	.	.	15.0	.	.	.	.	.	.
Pondicherry	7.0	.	.	.	1	1.0	.	.	9.0	.
Punjab	7.5	6	16.7	8.5	.	2.0	4.0	.	8.0	10.5
Tamil Nadu	36.3	9	9.0	39.0	19	5.0	.	44	20.0	2804.0
Tripura	20.3	2	.	19.0	.	1.0	.	.	5.7	29.5
Uttar Pradesh	661.0	26	112.0	30.0	2	11.0	28.0	.	22.0	.
Uttrakhand	27.0	21	19.0	.	.	.	.	.	.	.
West Bengal	253.0	5	6.0	15.0	15	13.0	.	4	120.0	247.0
Total	36.7	15.4	40.0	17.3	10.4	8.6	10.1	24.3	59.2	137.1

It was observed that in the government hospitals, on an average, 11 children were attended to in a working day (assuming 300 working days in a year) of which 7 were new registrations (Table 27). This shows that the pediatric clientele is limited in the government sector and there is a need to provide additional facilities for children to make the government hospitals attractive to children. Kerala was the exception as the reported pediatric out patient load was very high both for new as well as all registered cases. Nearly half the children who attended the out patient clinics came for refraction services as the mean refractions in children on a working day were 5 refractions (Table 27).

EUA was the commonest procedure performed on children at the government hospitals in the OT (Table 28). Squint and pediatric cataract were the other common surgical procedures among children. The pattern of out patient consultations and surgical procedures were generally similar across the government and NGO/ private sector but the overall clinical load and the surgical turnover was significantly higher in the NGO sector compared to the Government sector.

The proposed action plan for Vision2020 in India envisages the setting up of 50 pediatric ophthalmology units in the country. This would provide high quality pediatric service at a unit covering a population of 20 million. By 2020, it is necessary to target one such pediatric centre for every 10 million people in the country and therefore the number of such centers needs to be doubled. The government should play a proactive role in facilitating the initiation of such services and should also ensure that an adequate number of these pediatric eye care units are in the government sector.

5. Conclusions and Recommendations

The study was undertaken to provide information on the existing pediatric eye care services in India with special reference to the situation in the government sector. Available information in the country relates mostly to the NGO sector and therefore it was felt that this study was essential at this point in time. The study also aimed to identify the existing gaps in human resources and infrastructure so as to help in policy formulation and program implementation.

A total of 1053 hospitals responded of which 41.5% (437) were in the Government sector. The largest number of responses was received from the State of Gujarat where a large number of private practitioners provided data to the field investigator. Pooling data from all the secondary and tertiary care hospitals it was observed that there was an adequate ophthalmic workforce for general eye care as there were 3-4 ophthalmologists at each hospital (mean: 3.5).

Comparing the means for ophthalmologists and nurses from the pooled data it was seen that in general there were 2.5 nurses for 1 ophthalmologist at the responding hospitals. This is a positive development as having more para-ophthalmic personnel to support the services would increase the efficiency of the system. Some States like Tamilnadu, where the NGO sector is well developed had even better nurse: ophthalmologist ratios than the average for the country.

Wide variations across the States and also within the State were observed in relation to the human resources and infrastructure for eye care. Caution is required in interpretation of trends as the number of responses is not similar across the States. States where more responses were obtained would reflect the true picture in that State but in highly populated States where the response has been low, it is not prudent to generalize these findings to the entire State.

A total of 66 specialty trained pediatric ophthalmologists who have undergone at least 12 months training in pediatric eye care were reported to be working in different hospitals across the country. For a population of 1 billion that would translate to 1 pediatric ophthalmologist per 15 million population. Coupled with this low number of skilled personnel is the actual distribution of the trained personnel in the country. This lop sided distribution means that populations in many parts of North and East India have poor access to trained pediatric ophthalmologists unlike the situation existing in South and West India. It was also seen that functional pediatric eye care teams are available only in a few institutions. Pediatric eye care needs a team approach and therefore adequate efforts should be made in this direction.

Only a few States had dedicated facilities for children. Children cannot be equated to adults in

terms of eye care as their needs encompass not just the medical problem but also the social dimensions and emotional requirements. Only 11% of the responding hospitals had an established pediatric unit, while a dedicated ward for children was reported by 17.9%. Very few hospitals actually provided for pediatric beds exclusively and would provide them as and when required. In addition, 22.8% of hospitals reported a dedicated out patient clinic service for children. In 80.9% of the hospital, pediatric out patient clinics were available on all working days. Once again, it was observed that these services predominated in the Southern part of the country and in Delhi and Gujarat in the Northern part of the country. Increasing awareness amongst the ophthalmic fraternity about the need to support and provide for specialty services for children is essential.

It was observed that OT was available for an average of 10.5 hours per week for pediatric ophthalmic surgery. If the surgical turnover for children is to be around 10/ week, then the pediatric OT should be available for at least 10 hours per week. At the secondary level the requirement would be less but at the tertiary level the requirement would be more than 10 hours per week to balance the clinical load.

At the out patient clinic level, pooled data revealed that on an average, 10-11 children were seen in the out patient clinics per working day and of these, 5-6 were for refraction. Evidence points to the fact that the single largest ocular morbidity at the hospitals in India is due to refractive errors. These projections are based on an assumption of 300 working days in a calendar year. There is a wide variation across the States and between hospitals in the same State. For planning services, it will be important to look at each hospital and the population group that it serves in greater detail.

The common Ocular morbidities reported among the pediatric clientele were refractive error, conjunctivitis, disease of adnexa, cataract, squint Xerophthalmia, and Ocular trauma. Though there was a variation across institutions and States in terms of the average number of cases seen in a year, proportional morbidity due to the different causes appeared to be very similar. It is also interesting to observe an increase in posterior segment disorders among children in India and this morbidity is much higher than the nutritional and infective causes of visual impairment in children.

Cataract and squint were observed to be the commonest surgical procedures in children in the country. Examination under anesthesia was another common procedure reported. Other procedures reported at the different hospitals included lid surgery, pediatric glaucoma, DCR, keratoplasty, ptosis and laser/ROP though the quantum of these surgeries was much lower than cataract or squint.

Routine equipment for eye care was generally available in many hospitals but specialized equipment for pediatric eye care needs to be augmented. Specific equipment pieces like pre verbal tests were rarely available. Considering the availability of all essential equipment for a pediatric ophthalmology unit, it was observed that there are 15 institutes in the country that may be classified as well equipped pediatric ophthalmology units.

Perceptions of the community were captured through FGDs. It was evident that there is a lack of awareness on pediatric blindness in the community. Parents were anxious about social stigma and gender issues in relation to the visually impaired children. Therefore intensive efforts for eye health education are required.

Very few hospitals in the government sector responded to the questions related to pediatric eye care. It is likely that this was because of a lack of organized pediatric eye care facilities in the Government sector unlike the NGO sector which has made immense progress in pediatric eye care in the country. Only a total of trained pediatric ophthalmologists were reported to be working in the Govt. sector. Therefore there is an urgent need to train surgeons adequately to improve the overall quality of pediatric eye care in the country.

There was a complete lack of specifically trained pediatric nurses, optometrists and counselors in the government sector. Pediatric eye care needs a comprehensive pediatric team to deliver services and there is not a single government institution that had a trained complement of staff to constitute a pediatric eye care team.

The availability of OT for children, in the government sector was poor with the OT being available for only 8.3 hours every week in India. There was wide variation across the States from which responses were obtained. Pediatric surgery is a time consuming process and 8 hour availability (one working day) would mean 6-8 pediatric surgical procedures on a given working day.

Eighty percent of the respondent government hospitals provided a daily outpatient clinic for children even if it were not a dedicated 'children-only' service. A system where there is no separate entity dedicated to children generally fails to meet the requirements of the pediatric population as they have their own special needs which are different from adults. The parents of such children also need support and counseling and children need to be engaged with provision

of 'play-areas' and a colorful friendly environment.

The observations show that the government needs to consider strengthening the pediatric eye care services within the public funded institutions in the country. Using the expertise available at leading NGO hospitals in the country and tapping sources for supply of equipment and support for the infrastructure are necessary if the elimination of avoidable blindness in India is to be a reality by 2020.

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The proposed action plan for Vision2020 in India envisages the setting up of 50 pediatric ophthalmology units in the country. This would provide high quality pediatric service at a unit covering a population of 20 million. By 2020, it is necessary to target one such pediatric centre for every 10 million people in the country and therefore the number of such centers needs to be doubled. The government should play a proactive role in facilitating the initiation of such services and should also ensure that an adequate number of these pediatric eye care units are in the government sector

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7. ANNEXURES

WHO- DR. R. P. CENTRE PROJECT

SITUATIONAL ANALYSIS OF HUMAN RESOURCES AND INFRASTRUCTURE IN CONTROL OF CHILDHOOD BLINDNESS IN INDIA- 2007

Name of Institution: _____

1. CONTACT DETAILS (Name and Address) :

Name of the Contact person: _____

Address: _____

District: _____ State: _____ Pin Code: _____

Phone no. (With STD code): _____ Email: _____

2. HUMAN RESOURCE (GENERAL):

S.No.	Personnel	Number
1.	Ophthalmologists	-----
2.	Anaesthetist	-----
3.	Optometrists	-----
4.	Nurses	-----
5.	Counsellors	-----

3. HUMAN RESOURCE FOR PEDIATRIC CARE (Children <16 yrs of age):

Personnel	Number
1. Pediatric Ophthalmologist (<i>Those who finished 1 year fellowship only</i>)	-----
2. Pediatric Oriented Ophthalmologist (<i>Those who finished at least 3 months specialised training- Short Term Fellowship</i>)	-----
3. Other Ophthalmologists (<i>Those who do pediatric surgeries</i>)	-----
4. Pediatrician/neonatologist (part-time/ full-time)	-----
5. Pediatric anaesthetist	-----
6. Trained Pediatric nurse	-----
7. Trained Pediatric Counsellor	-----
8. Trained Pediatric Optometrist	-----
9. Trained Pediatric Orthoptist	-----

4. HOSPITAL FACILITIES

4.1. INFRASTRUCTURE- GENERAL:

- a. No. of free eye beds : _____
- b. No. of paid/ subsidised eye beds : _____
- Total no. of eye beds (Paid + Free)** : _____
- c. No. of Operation Tables for Eye Surgery : _____
- d. No. of days OT tables available for eye/ week : _____
- e. No. of hours OT tables available for eye/ OT day : _____

4.2. INFRASTRUCTURE- PEDIATRIC EYE CARE:

- 1. Is there a separate pediatric unit in the eye hospital / dept.? Yes No
- 2. Is there a separate pediatric ward? Yes No
- 3. Is there a separate pediatric OPD/ Clinic? Yes No
- 4. No. of pediatric eye beds available? -----
- 5. No. of Operation Tables for pediatric surgery? -----
- 6. No. of hours / week OT available for pediatric surgery? -----
- 7. What is the frequency of the **OPD/ Clinic**? Daily 3-5 days/wk 1-2 days/wk NA
- 8. What is the frequency of the **pediatric OT**? Daily 3-5 days/wk 1-2 days/wk NA

5. GENERAL CLINICAL SERVICES:

S.No.	Number of patients	Apr 2005 – Mar 06 (All ages)
1.	Total new cases registered in eye department	-----
2.	Total old cases registered in the eye department	-----
	Total Cases (New + Old)	-----
3.	No. of refractions performed	-----
4.	Is there a 24- hour functional emergency unit?	<input type="radio"/> Yes <input type="radio"/> No
5.	Is there an optical unit	<input type="radio"/> Yes <input type="radio"/> No

6. PEDIATRIC CLINICAL SERVICES:

S.No.	Number of patients	Apr 2005 – Mar 06 (<16 yrs of age)
1.	Total pediatric new cases registered in eye department	-----
2.	Total old pediatric cases registered in the eye department	-----
	Total Cases (New + Old)	-----
3.	No. of refractions performed among children(<16 yrs of age)	-----

7. SPECIFIC DIAGNOSIS IN OPD REGISTERED CASES (Please write in numbers):

Diagnosis	Number in Apr 2005- Mar 06 Adults (>=16 yrs age)	Number in Apr 2005- Mar 06 <16 yrs age
Cataract	-----	-----
Refractive Errors	-----	-----
Glaucoma	-----	-----
Diseases of Adnexa	-----	-----
Ptosis	-----	-----
Ocular Trauma	-----	-----
Conjunctivitis	-----	-----
Trachoma	-----	-----
Pterygium	-----	-----
Squint	-----	-----
Amblyopia	-----	-----
Uveitis	-----	-----
Xerophthalmia	-----	-----
Other Corneal Opacities	-----	-----
Retinopathy of Prematurity	-----	-----
Other Retinopathies	-----	-----
Vireo-Retinal disorders	-----	-----
Diagnosis not recorded	-----	-----
Others Specify	-----	-----
1: _____	-----	-----
2: _____	-----	-----

8. SURGICAL SERVICES (ADULTS):

Type of Surgery	No. operated during Apr 2005 – Mar 06
Cataract	
ICCE	-----
ECCE (without IOL)	-----
ECCE + PC IOL	-----
Phaco	-----
Manual SICS	-----
YAG Laser	-----
Glaucoma	
Trabeculectomy	-----
Laser for TRAB	-----
Squint	-----
Lid Surgery	-----
Keratoplasty	-----
Refractive surgeries	-----
DCR/DCT	-----
Vitreo-retinal surgery	-----
Laser for retina (DR etc.)	-----
Others (specify) _____	-----

9. PEDIATRIC SURGICAL OUTPUT / PROCEDURES UNDER ANESTHESIA:

Type of Surgery	No. operated during Apr 2005 – Mar 06
Pediatric Cataract	_____
Congenital Glaucoma/ Buphthalmos	_____
Squint	_____
Lid Surgery	_____
Keratoplasty	_____
DCR/DCT	_____
Ptosis	_____
Laser/ Cryo for ROP	_____
Examination under Anaesthesia	_____
Others (specify) _____	_____
_____	_____

10. FUNCTIONAL EQUIPMENTS: (please remember to write only functional not all the stocked equipments)

EQUIPMENT:	No. functional
1. Operating microscope (co-axial)	-----
2. Streak Retinoscope	-----
3. Trial sets	-----
4. Pediatric trial frames	-----
5. Laser (diode – indirect)	-----
6. Argon/ Green Laser	-----
7. YAG laser	-----
8. Other Laser Please specify: _____	-----
9. Cryo	-----
10. Pediatric probes for cryo	-----
11. Electrodiagnostic equipment (VER/ ERG/ EOG)	-----
12. Vitrectomy machine	-----
13. Low vision equipment	-----
14. OCT	-----
15. Goldman/ Automated perimeter	-----
16. Tonometer– Perkins/ Tonopen/ Goldmann	-----
17. Non Contact Tonometer	-----
18. Indirect ophthalmoscope	-----
19. Direct Ophthalmoscope	-----
20. Slit lamp	-----
21. Colour vision test	-----
22. A-scan ultrasound	-----
23. B-scan ultrasound	-----
24. Keratometer	-----
25. Refractometer	-----
26. Pre-verbal vision test (Teller’s / Cardiff Visual Acuity Cards)	-----
27. Synoptophore	-----
28. Fundus Camera	-----
29. CT/MRI (access to)	-----
Anaesthesia Equipment:	
1. Pediatric anesthesia equipment	-----
2. Monitor and pulse oxymeter	-----
3. Other Equipments: _____	-----

Signature of Head of Department of Ophthalmology_____

Name of Head of Department of Ophthalmology_____

Date: _____

Stamp of institution: _____

Table A: List of Responding Institutions

S.No	Name of the Institute	District
	Andhra Pradesh	
1	District H.Q. Hospital Adilabad	Adilabad
2	Sukhahogi Sevasamithi Free Eye Hospital	Adilabad
3	District Hospital Anantapur	Anantapur
4	Area Hospital Kadiri	Anantapur
5	Govt. Medical College, Anantapur	Anantapur
6	Shi Sathya Sai Institute Of Higher Medical Sciences	Anantapur
7	S.V. Medical College	Chittoor
8	District H.Q. Hospital Chittoor	Chittoor
9	Sapthagiri Eye Care Center	Chittoor
10	Rangarajan Medical College	East Godavari
11	Nayana Eye Care	East Godavari
12	Akira Eye Hospital	East Godavari
13	A.S.R.Murty Clinic	East Godavari
14	Leeser Wright Eye Care Dept.Of Women's Hospital	East Godavari
15	Konaseema Institute Of Medical Sciences	East Godavari
16	Christian Medical Center	East Godavari
17	Goutami Eye Institute	East Godavari
18	Sriikiran Institute Of Ophthalmology	East Godavari
19	District Hospital East-Godavari	East-Godavari
20	A.M.G Silon Institute Of Ophthalmology	East-Godavari
21	Guntoor, Medical College	Guntur
22	Asvini Nethralayam	Guntur
23	Sankara Eye Hospital	Guntur
24	NRI Medical College & Gen/. Hospital	Guntur
25	Sarojini Devi Eye Hospital, Regional Institute Of Ophthalmology	Hyderabad
26	Dept. Of Ophthalmology Osmania General Hospital	Hyderabad
27	Kishore Cand Chordia Eye Center	Hyderabad
28	Abid Ali Khan Eye Hospital	Hyderabad
29	Deccan College of Medical Sciences	Hyderabad
30	Dr. Rana Reddy Lion Eye Hospital	Hyderabad
31	E.S.I.C. Model Hospital	Hyderabad
32	Care Hospital Nampalli	Hyderabad
33	C.S.I Campbell Hospital	Kadapa
34	Prathima Institute of Medical Sciences Nagunur- Karimnagar A.P	Karimnagar

35	District Hospital Khammam	Khammam
36	Mamta Medical College	Khammam
37	Main Hospital, Singareni Collieries Company Ltd	Khammam
38	Chaitanya Eye Hospital	Krishna
39	Sandhya Hi Tech Vision Care Center	Krishna
40	Rotary Eye Hospital	Krishna
41	District Hospital Kurnoor	Kurnool
42	Padmabhushan Dr. R .Siva Reddy Govt. Regional Eye Hosp Kurnool	Kurnool
43	Govt. H.Q. Hospital Mahabub Nagar	Mahabub Nagar
44	SVS Medical College & Hospital	Mahabub Nagar
45	Ram Reddy Lion Eye Hospital	Mahabub Nagar
46	District Hqrs.Hospital Saugaroddy	Medak
47	District H.Q. Hospital Nalgonda	Nalgonda
48	Kamineni Institute Of Medical Sciences & Hospital	Nalgonda
49	Lions Club Of Suryapet Eye Hospital	Nalgonda
50	D.S.R. Govt. Hqrs, Hospital	Nellore
51	Narayana Medical College Hospital	Nellore
52	Modern Eye Hospital Research Center	Nellore
53	Bollineni Eye Hospital & Reserch Center	Nellore
54	District H.Q Hospital Nizamabad	Nizamabad
55	Christian Medical College & Hospital	Nizamabad
56	Sneha Charity Eye Hospital	Nizamabad
57	Megha Hospital	Nizamabad
58	Sri Rama Nethra Vidyashala.	Nizamabad
59	Vasavi Eye Hospital	Nizamabad
60	Harsha Sai Eye Hospital	Nizamabad
61	V.T. Thakur, Lions Eye Hospital	Nizamabad
62	Dr K. V. Reddy Memorial Lions Eye Hospital	Nizamabad
63	C.P. Brown Netralaya Trust	Nizamabad
64	G.S.L. General Hospital	Rangareddi
65	M.S. Reddy Lions Eys Hospital	Rangareddi
66	L. V. Prasad Eye Institute	Rangareddi
67	Prem Eye Care Center	Secunderabad
68	Pushpagiri Eye Institute	Secunderabad
69	Rotary Netra Rural Eye Hospital	Visakhapatnam
70	Vision- Ail Charitable Services Society	Visakhapatnam
71	Sankar Foundation	Visakhapatnam
72	Visakha Steel General Hospital- Ophthalmology Dept.	Visakhapatnam
73	Visakhapatnam L V Prasad Eye Institute	Viskhapatnam

74	Maharaja Dist Hq Hospital	Vizianagaram
75	Maharajah's Institute & Medical Sciences	Vizianagaram
76	Ophthalmic Unit Area Hospital	Warangal
77	Regional Eye Hospital, Warangal Medical College	Warangal
78	Sharat Laser Eye Hospital	Warangal
79	Star of Hope Hospital, Akividu	West Godavari
80	Ophthalmic Unit. Dist. HQ. Hospital	West Godavari
81	U.V Subba Raju Memorial Eye Hospital	West Godavari
82	Alluri Sutarama Raju Academy Medical College	West Godavari
83	Rajavalli Radha Raman Lions Eye Hospital	West Godavari
84	Smt. Rajeswari Ramakantshhn Lions Eys Hospitals	West Godavari
85	PES Institute of Medical Sciences and Research, Kuppam, Chittoor	
86	Durga Bai Deshmukh Hospital, Vidya Nagar	
	Arunachal Pradesh	
1	District Hospital, Changlang	Changlang
2	District Hospital Roing	Dibang Valley
3	District Hospital, Seppa	East Kameng
4	General Hospital Pasighat	East Siang
5	District Hospital Tezu, Arunachal Pradesh	Lohit
6	District Hospital Ziro	Lower Subansiri
7	District Hospital	Papum Pare
8	Ramakrishna Mission Hospital, Itanagar, Arunachal Pradesh	Papum Pare
9	District Hospital Tawang	Tawang
	Asaam	
1	Barpeta Civil Hospital	Barpeta
2	Joint DHS Office Bongaigaon	Bongaigaon
3	District Hospital	Cachar
4	Mangaloloi Civil Hospital	Darrang
5	Dhemaji Civil Hospital	Dhemaji
6	Dhubri Civil Hospital	Dhubri
7	Civil Hospital Dibrugarh	Dibrugarh
8	Assam Medical College, Dibrugarh	Dibrugarh
9	Goalpara Civil Hospital	Goalpara
10	Golaghat Civil Hospital	Golaghat
11	Civil Hospital Hailakandi	Hailakandi
12	Jorhat Civil Hospital	Jorhat
13	Chandraprabha Eye Hospital	Jorhat
14	Regional Institute Of Ophthalmology	Kamrup
15	Mahendra Mohan Charitable Hospital	Kamrup

16	Sr.Sankaradeva Nethralaya	Kamrup
17	Civil Hospital Karbi Anglong	Karbi Anglong
18	Karimganj Civil Hospitla	Karimganj
19	Klkrajhar Civil Hospitla	Kokrajhar
20	North Lakhimpur Civil Hospital	Lakhimpur
21	Morigaen Civil Hospital	Marigaon
22	Nalbari Civil Hospital	Nalbari
23	Nagan Civil Hospital	Naugaon
24	Haflong Civil Hospital	North Cachar Hills
25	Sibsagr Civil Hospital	Sibsagar
26	Tejpur Civil Hosital	Sonitpur
27	District Hospital	Tinsukia
	Bihar	
1	Eye Clinic Ararja	Araria
2	District Hospital Aurangabad	Aurangabad
3	District Hospital Banka	Banka
4	Sadar Hospital	Begusarai
5	District Hospital Bhagalpur	Bhagalpur
6	District Hospital Kaimur (Bhabhua)	Bhagalpur
7	District Hospital Ara,(Bhojpur)	Bhojpur
8	District Hospital Buxar	Buxar
9	Darbhanga Medical College	Darbhanga
10	A.N. Magadh Medical College Hospital	Gaya
11	Pilgrim Hospital Gaya	Gaya
12	District Hospital Gopal ganj	Gopalganj
13	Divisional Hospital Jamui	Jamui
14	Sadar Hospital Jehanabad	Jehanabad
15	10 Beded Eye Hospital, Sadav Hospital, Katihar	Katihar
16	Katihar Medical College & Hospital	Katihar
17	District Hospital Khagaria	Khagaria
18	Divisional Hospital Kishanganj	Kishanganj
19	Divisional Hospital Lakhisari	Lakhisarai
20	Sadar Hospital	Madhepura
21	District Hospital Madhubani	Madhubani
22	District Hospital Munger	Munger
23	Muzaffarpur Eye Hospital	Muzaffarpur
24	Sadar Hospital Muzffarpur	Muzaffarpur
25	Shri. Krishna Medical College,Muzffarpur	Muzaffarpur
26	District Hospital Bihurshurif	Nalanda

27	District Hospital Nawada	Nawada
28	Maharani Janki Kuwar Hospital	Pashchim Champaran
29	District Hospital Bettiah (West Champaran)	Pashchim Champaran
30	Distraict Hospital Motihari (East Champaran)	Pashchim Champaran
31	Nalanda Medical College & Hospital	Patna
32	Regional Instituts Of Ophthalmology	Patna
33	Patna Medical College	Patna
34	E.S.I. Hospital Patna	Patna
35	Divisional Railway Hospital	Patna
36	District Eye Care Research Center	Patna
37	Patna Eye Center	Patna
38	Renu Eye Center	Patna
39	Parmar Netralaya	Patna
40	Maulana Sajjad Memorial Hospital	Patna
41	Lions Vision Care	Patna
42	Mahavir Anaetralaya	Patna
43	Kurji Holy Family Hospital	Patna
44	Tripoha Hospital	Patna
45	Sadan Hospital Puna	Purnia
46	Kamal nayan Netralaya	Purnia
47	District Hospital Sasaram (Rohtas)	Rohtas
48	Private Clinic	Saharsa
49	Sadar Hospital	Saharsa
50	District Hospital Samastipur	Samastipur
51	Divisional Railway Hospital	Saran
52	District Hospital chapra Saran	Saran
53	District Hospital Shelkhpura	Sheikhpura
54	District Hospital Sheohar	Sheohar
55	District Hospital Sitamarhi	Sitamarhi
56	Sub-Div.Hospital	Supaul
57	District Hospital Supaul	Supaul
58	Sadar Hospital,Hajipur	Vaishali
	Chandigarh	
1	Govt. Medical College	Chandigarh
2	Postgraduate Institute Of Medical Education & Research	Chandigarh
	Chhattisgarh	

1	Jeevan Jyoti Netralaya	Bastar
2	Govt. Medical College, Jagdalpur	Bastar
3	Chhattisgarh Institute of Medical Sciences Bilaspur	Bilaspur
4	District Hospital Bilaspur	Bilaspur
5	Maharani Hospital Jagdalpur	Dhamtari
6	District Hospital Dhamtari	Dhamtari
7	District Hospital Durg	Durg
8	Changu Lal Chandrakar Memorial Hospital Bhilai	Durg
9	Champa Christian Hospital	Janjgir-Champa
10	District Hospital Janjgir	Janjgir-Champa
11	Vivekanand Tribal Hospital Dharampura, Jagdalpur	Jashpur
12	District Hospital Korba	Korba
13	Main Hospital SECL, Korba	Korba
14	C.S.E.B Korba East Hospital	Korba
15	Banki And Surakachar S.E. C.L. Hospital	Korba
16	Central Hospital Manendragarh	Koriya
17	Regional Hospital, Kurasia (Chirimiri),	Koriya
18	Eye Hospital (10 Bedded) Baikunthpur	Koriya
19	Regional Hospital Churcha	Koriya
20	20 Bedded Eye Hopital	Mahasamund
21	Kirodimal Gov. Hospital Raigarh	Raigarh
22	Pt.J.N.M.M.College Raipur	Raipur
23	Modern Medical Institute, Raipur	Raipur
24	Aurobindo Eye Hospital, Raipur	Raipur
25	Janaswamy Eye Institute & Research Center, Raipur	Raipur
26	Govt. District Hospital Raipur	Raipur
27	Christian Fellowship Hospital	Rajnandgaon
28	Udayachal Charitable Eye Hospital & Research Center	Rajnandgaon
29	District Hospital Rajnandgaon	Rajnandgaon
	Delhi	
1	D.D.U. Hospital	
2	E.S.I. Hospital Okhla	
3	Aruna Asaf Ali Govt. Hospital	
4	Dr. Ram Manohar Lohia Hospital	
5	Safdarjang Hospital	
6	Guru Nanak Eye Center	
7	Sanjay Gandhi Memorial Hospital	
8	VCMS+GTB Hospital Shadara	
9	Bhagwan Mahavir Hospital	

10	Rao Tala Ram Memorial Hospital, Govt. Of NCT Of Delhi, Jaffer Pur	
11	E.S.I.Hospital Rohini	
12	Guru Gobind Singh Govt. Hospital	
13	Dr.Hedgewal Arogya Sansthan Karkardooma	
14	BJRM Hospital General Hospital, with small eye department.	
15	Swami Daya Nand Hospital	
16	Army Hospital(R & R) Delhi Cantt	
17	Dr.R.P.Center For Ophthalmic Science	
18	Shroff Eye Center	
19	Mohan Eye Institute	
20	Indraprastha Apollo Hospital	
21	Aashlok Hospital	
22	Hemraj Jain Hospital & Maternity Home	
23	Holy Augcls Hospitals	
24	Center For Sight	
25	Kesar Hospital	
26	Saroj Hospital	
27	Jaipur Golden Hospital	
28	M.G.S.Hospital	
29	Nanda Charitabale Hospital	
30	Chaudhary Eye Centre & Laser Vision	
31	South Point Hospital	
32	Healing Touch Hospital	
33	Jain Darmarth Hospital	
34	Jasrotia Hospital	
35	Nulife Hospital & Maternity Centre	
36	G.T.K.Hospital	
37	Sunder Lal Jain Hospital	
38	Daya Hospital Paschim Vihar	
39	Jeewanmala Hospital	
40	Gupta Eye Hospital	
41	Mata Chanan Devi Hospital	
42	Surya Hospital	
43	Kolmet Hospital	
44	Life Line Hospital	
45	Kukreja Hospital & Heart Centre Pvt.Ltd.	
46	Tirath Ram Shah Charitable Hospital	
47	Banarsidas Chandiwala Institute of Medical Sciences	
48	Holy Family Hospital	

49	Sir Ganga Ram Hospital	
50	Vemu Eye Insitute & Research Center	
51	Dr. Shroff's Charity Eye Hospital	
52	Maharaja Argasian Hospital	
53	Attar Sainjain Eye & Genrerel Hospital	
54	R.B.Seth jesha Ram & Brds.	
55	Indira Gandhi ESI Hospital,Jhilmil	
56	St.Stephens Hospital	
57	Lal Bahadur Shastri Hospital	
58	Lady Hardinge Medical College	
59	Dr. B.S. Ambedkar Hospital Rohini	
	Goa	
1	Goa Medical College and Hospital	North- Goa
2	Bhagyoday Hospital	North-Goa
	Gujarat	
1	General Hospital Ahmedabd Municipal Corporation	Ahmedabad
2	SMT. Shardaben Chimanlal Municipal Hospital	Ahmedabad
3	General Hospital Ahmedabad	Ahmedabad
4	Ajay Bankar Eye Centre	Ahmedabad
5	Anil & Darshin Bavishi Eye Center	Ahmedabad
6	Arun Bhade Eye Centre	Ahmedabad
7	Tushar Bhatt Eye Centre	Ahmedabad
8	Divyang Brmabhatt Eye Centre	Ahmedabad
9	Aditya Mishra Eye Centre	Ahmedabad
10	Minaxi Llala Eye Centre	Ahmedabad
11	K. Nancvaty & I. Nancvaty Eye Center	Ahmedabad
12	Allesh & Parul Parikh Eye Center	Ahmedabad
13	Sunil Parikh Eye Centre	Ahmedabad
14	Anish Patel Eye Centre	Ahmedabad
15	Amit Patel Eye Bank	Ahmedabad
16	Sunil Gupta Eye Centre	Ahmedabad
17	Manohar Kherkhai Eye Center	Ahmedabad
18	Parul Madia Eye Center	Ahmedabad
19	A. L Mansuri Eye Centre	Ahmedabad
20	Sejal Desai Eye Center	Ahmedabad
21	Sanjay Gandhi Eye Center	Ahmedabad
22	Ajay Garg Eye Centre	Ahmedabad
23	Sanjay Goril Eye Center	Ahmedabad
24	Chirag Desai Eye Centre	Ahmedabad

25	Dipan Desai Eye Centre	Ahmedabad
26	Jigeesh Desai Eye Center	Ahmedabad
27	Parimal Desai Eye Center	Ahmedabad
28	Rohit Desai Eye Centre	Ahmedabad
29	Arti Dave Eye Centre	Ahmedabad
30	Sanjay Chhalora Eye Center	Ahmedabad
31	R.J. Chhapan And Swati Chhapan Eye Centre	Ahmedabad
32	Ashish Dave Eye Centre	Ahmedabad
33	Subhash Dave Eye Centre	Ahmedabad
34	Nittin Trivedi Eye Center	Ahmedabad
35	M V Vachhrajani Eye Centre	Ahmedabad
36	A R Vashvada Eye Centre	Ahmedabad
37	J.V. Vidhani Eye Centre	Ahmedabad
38	Kamini Vora Eye Center	Ahmedabad
39	Sandip Vora Eye Center	Ahmedabad
40	Ashok Talati Eye Centre	Ahmedabad
41	Dushyant Talsania Eye Center	Ahmedabad
42	Mahendera Thakkar Eye Center	Ahmedabad
43	Rajive Thakkar Eye Center	Ahmedabad
44	Bahul And Samiksha Trivedi Eye Centre	Ahmedabad
45	Rajesh Shah Eye Centre	Ahmedabad
46	Shrenik Shah Eye Centre	Ahmedabad
47	Sunil Shah Eye Centre	Ahmedabad
48	Tejus Shah Eye Centre	Ahmedabad
49	Twinkal Shah Eye Centre	Ahmedabad
50	Jagruti Shah Eye Centre	Ahmedabad
51	Jayant Shah Eye Centre	Ahmedabad
52	Mona Shah Eye Centre	Ahmedabad
53	Parag Shah Eye Centre	Ahmedabad
54	Paresh Shah Eye Centre	Ahmedabad
55	Ami Shah Eye Centre	Ahmedabad
56	Shashavi Shah Eye Centre	Ahmedabad
57	Anil Shah Eye Centre	Ahmedabad
58	Aashish Shah Eye Centre	Ahmedabad
59	Mahesh & Bharti Shah Eye Center	Ahmedabad
60	Hitesh Ramanuj Eye Centre	Ahmedabad
61	Jagdish Rana Eye Centre	Ahmedabad
62	Shashank Rathod Eye Centre	Ahmedabad
63	Manish Raval Eye Centre	Ahmedabad

64	Amit Sanghvi Eye Centre	Ahmedabad
65	Maniben Eye Centre	Ahmedabad
66	Vinod Patel Eye Centre	Ahmedabad
67	Ashish Patwa Eye Centre	Ahmedabad
68	Harshed Prajapati Eye Centre	Ahmedabad
69	Parth Patel Eye Centre	Ahmedabad
70	Rupande Patel Eye Centre	Ahmedabad
71	Samir Patel Eye Centre	Ahmedabad
72	Shirish Patel Eye Centre	Ahmedabad
73	Sonali And Urmit Patel Eye Center	Ahmedabad
74	Amrit Patel Eye Centre	Ahmedabad
75	Anil Patel Eye Centre	Ahmedabad
76	Bhakti Patel Eye Centre	Ahmedabad
77	G.R.Patel Eye Centre	Ahmedabad
78	Narendra Patel Eye Centre	Ahmedabad
79	Ashit Shah Eye Centre	Ahmedabad
80	'Eye Care' Eye Hsopital	Ahmedabad
81	Iladevi Cataract & IOL Research Center	Ahmedabad
82	Sahyog Eye Centre	Ahmedabad
83	Lions Hospital	Ahmedabad
84	Sharda Eye Hospital Uphaco Centre	Ahmedabad
85	Har Govind dass Prubhudas Eye Hospital	Ahmedabad
86	C.H. Nagri Eye Hospital	Ahmedabad
87	H.P. Sadvichar Parivar Eye Hospital	Ahmedabad
88	M & J Western Regional Institute of Ophthalmology	Ahmedabad
89	Monibin Eye Hospital	Ahmedabad
90	Al Amin Hospital	Ahmedabad
91	Shivam Eye Hospital	Ahmedabad
92	Victoria Jublee Hospital	Ahmedabad
93	Maniben Eye Hospital	Ahmedabad
94	Sahyog Eye Hospital	Ahmedabad
95	Sheth Pukhraj General Hospital	Ahmedabad
96	U.N.Metha Eye Hospital	Ahmedabad
97	Dhanvantary Charitable General Hospital	Ahmedabad
98	Ranchhudrai Eye Hospital	Ahmedabad
99	Patels Nursing Home	Ahmedabad
100	Lioness Karnavati Eye Hospital	Ahmedabad
101	Panchsheel Hospital	Ahmedabad
102	Nagri Muni Eye Hospital	Ahmedabad

103	Manibai Hospital SC 2 Municipal Hospital	Ahmedabad
104	Parinal Hospital	Ahmedabad
105	Shree Jyoti Eye Hospital	Ahmedabad
106	Shreeji Eye Hospital	Ahmedabad
107	Dr. Kishor Shashami	Ahmedabad
108	Kesar Sal Medical College & Research Centre	Ahmedabad
109	Nainej Eye Hospital	Ahmedabad
110	Amdavad Eye Care centre	Ahmedabad
111	Bapunagar Gen Hospital	Ahmedabad
112	Pukhraj Raichand Gen Hospital	Ahmedabad
113	Sahajanand Eye Care Hospital Dudhiya	Ahmedabad
114	Shilp Hospital Sarkhej	Ahmedabad
115	Aashirvad Eye Hospital	Ahmedabad
116	Chandramani Hospita	Ahmedabad
117	Gurunanak Hospital	Ahmedabad
118	Civil Hospital Amreli	Amreli
119	S.S. Hospital Pehad	Anand
120	Dikesh Godril Eye Centre	Banaskantha
121	Civil Hospital Bharuch	Bharuch
122	Sewa Rural	Bharuch
123	E.S.I.S. General Hospital	Bhavnagar
124	Medical College	Bhavnagar
125	Western Railway Devisional Hospital	Bhavnagar
126	Civil Hospital Dahod	Dahod
127	Drashti Netralaya	Dahod
128	Abad Bank Eye Hospital	Dhegam
129	Tejal Dalal Eye Centre	Gandhi Nagar
130	District Hospital	Gandinagar
131	Ramesh & Sanjive Mehta Eye Center	Godhra
132	M.P. Shah Medical College	Jamnagar
133	Shree Dwarkadhish Arogya Dham Eye Care Center	Jamnagar
134	JaumKham Bhodia General Hospital	Jamnagar
135	Civil Hospital Junagadh	Junagadh
136	Rita Shah Eye Centre	Kapadwanj
137	Kutch Vikas Trust	Kutch
138	G.K. General Hospital	Kutch
139	Mayank Gandhi Eye Center	Mavi Nagar
140	General Hospital Mehsana	Mehsana
141	Viishnu Patel Eye Centre	Mehsana

142	Mukesh Patel Eye Center	Mehsana
143	Rajesh Luhana Eye Centre	Mehsana
144	Ramesh Patel Eye Center	Mehsana
145	M.J.Shah & Sunil Shah Eye Center	Mehsana
146	Roatay Eye Institute	Navsari
147	M.G.G. Civil Hospital	Navsari
148	Gram Seva Trust	Navsari
149	General Hospital Panmahal	Panchmahal
150	Ashutosh Regional Medical Centre & CHC Malav	Panchmahal
151	R K Shah Eye Centre	Panchmahal
152	Rotary Hospital	Panchmahal
153	P.T.Murari Eye Centre	Panchmahal
154	Rahul Govdhi Eye Centre	Patan
155	Pandit Deendayal Upadhyay Medical College	Rajkot
156	Shri Swaminarayan Gurukul Hospital	Rajkot
157	Old Civil Eye Hospital	Surat
158	Govt. Medical College	Surat
159	Bharat Patel Eye Centre	Surat
160	N Y Motiwala Eye Centre	Surat
161	Chandra Dutt Patel Eye Centre	Surat
162	Dipesh Parkash Eye Ccentre	Surat
163	Nilesh Patel Eye Centre	Surat
164	Rohinton J Jehurgirji	Surat
165	Imtiaz Lakdvala Eye Centre	Surat
166	Jagdeep Joshipura Eye Centre	Surat
167	Upendera Kalaigar Eye Centre	Surat
168	Popat Llugaria Eye Centre	Surat
169	Khushnoud Shaikh Eye Centre	Surat
170	Suresh Sonani Eye Centre	Surat
171	Vikas Thakker Eye Centre	Surat
172	Paresh Vaidya Eye Center	Surat
173	Shripal Bhatiwala Eye Centre	Surat
174	Nandini Limidi Eye Centre	Surat
175	Kkaushal Bhansan Eye Centre	Surat
176	Rajesh Desai Eye Centre	Surat
177	Mahndra Chauhan Eye Centre	Surat
178	Yogesh Desai Eye Centre	Surat
179	Ashish Gajjar Eye Centre	Surat
180	Nitin Garg & Mitali Garg Eye Center	Surat

181	Mayur Parmar Eye Centre	Surat
182	Virendra Sonani Eye Centre	Surat
183	Dhoval Raijiwal Eye Centre	Surat
184	Ralindra Sachdev Eye Centre	Surat
185	Alpesh Shah Eye Centre	Surat
186	Ajmi Eye Hospital	Surat
187	Dr.Nandani Umidi Eye Centre	Surat
188	Dr. Spawljan Eye Centre	Surat
189	Dr. Rmesh Babariya Eye Centre	Surat
190	Dr.Prbhaker & K.Damor Eye Center	Surat
191	Dr.Jahangir Ji & Rohinton Eye Centre	Surat
192	Dr. Upendra. B. Kalaigar Eye Centre	Surat
193	Dr.Imtiaz Lakadavala Eye Centre	Surat
194	Dr.Dipesh.S.Parekh Eye Centre	Surat
195	Dr.Popat Lungaria Eye Centre	Surat
196	Mahavir Genral Hospital	Surat
197	Mahatma Gandhi Smarak General Hospital	Surendranagar
198	C.U. Shah Medical College	Surendranagar
199	Navin Patel Eye Centre	Surendranagar
200	Arun Gor Eye Centre	The Dangs
201	Vadilal Eye Hospital	Vadodara
202	Netradeep Eye Hospital	Vadodara
203	Baroda Medical College	Vadodara
204	Dr.Mehta Eye Hospital	Vadodara
205	Sundram Hospital	Vadodara
206	I Care Hospital	Vadodara
207	Mona Eye Hospital	Vadodara
208	Sanjivani Eye Hospital	Vadodara
209	Roshni Eye Hosital	Vadodara
210	Dundaram Hospital Alkapuri	Vadodara
211	ESI Hospital Vadodara	Vadodara
212	Dr. Kadam Eye Hospital	Vadodara
213	Jamunabai Hospital	Vadodara
214	S.B.K's Medical Inst. Research centre	Vadodara
215	General Hospital Valsad	Valsad
216	Lions Eye Hospital	Vapi
217	Rakesh Patel Eye Centre	Visnagar
218	B.M.Parikh foundation Trust	Vodadara
219	Eye Care Hospital	

220	Tej Eye Hospital	
221	Ranchhoddasji Eye Hospital	
222	Arman Eye Hospital	
223	Navjyot Eye Hospital	
	Haryana	
1	General Hospital Nariangarh	Ambala
2	G.Hospital Ambala City	Ambala
3	M.M. Institute Of Medical Sciences & Research	Ambala
4	K.L. Jalan Govt. Eye Hospital	Bhiwani
5	District Hospital Bhiwari	Bhiwari
6	B K Hospital Faridabad	Faridabad
7	General Hospital Fatehabad	Fatehabad
8	General Hospital Gurgaon	Gurgaon
9	Sdhesh Hospitals	Gurgoan
10	Jain Hospital	Gurgoan
11	Pushpanjali Hospitals	Gurgoan
12	Hans Eye Center	Gurgoan
13	General Hospital Hisar	Hisar
14	Office Of Civil Surgeon Jhajjar	Jhajjar
15	General Hospital Jind	Jind
16	General Hospital Kaithal	Kaithal
17	General Hospital Karnal	Karnal
18	Arpana Research & Charities Trust	Karnal
19	General Hospital Kurukshetra	Kurukshetra
20	General Hospital Narnaul	Mehendragarh
21	General Hospital Narnual	Narnual
22	General Hospital Panchkula	Panchkula
23	Dr R.K.Kapahtia	Panchkula
24	Jyoti Eye Centre	Panchkula
25	District Hospital Panipat	Panipat
26	General Hospital Rewari	Rewari
27	Regional Institute Of Ophthalmology,PGIMS Rohtak	Rohtak
28	General Hospital.Rohtak	Rothak
29	General Hospital Sirsa	Sirsa
30	General Hospital Sonipat	Sonipat
31	General Hospital,Jagadhri	Yamuna Nagar
32	Northan Railway Hospital,Jagadhri Workshop,Yamunanagar	Yamuna Nagar
33	Sr.Suresh Chander Memorial Eye Hospital	Yamuna Nagar
34	Arvind Eye Hospital,Yamunan Nagar	Yamuna Nagar

35	Bansal Eye Hospital,Jagadhri	Yamuna Nagar
36	Smt.Shanti Devi's Kalra Eye &Matrrnity Hospital	Yamuna Nagar
37	Dr.B.R.Kalra Eye +Gen.Hospital	Yamuna Nagar
38	Goel Eye Care Centre	Yamuna Nagar
39	Balaji Hospital	Yamuna Nagar
40	Dua Eye Center Yamuna Nagar	Yamuna Nagar
41	Sanjivani Eye & Maternity Hospital	Yamuna Nagar
42	Roop Rani Free Sewa Eye Hospital	Yamuna Nagar
	Himachal Pradesh	
1	Distrcet Hospital Bilaspur	Bilaspur
2	District Hospital Chamba	Chamba
3	Zonal District Hospital Dharmshala	Dharmshala
4	District Hospital Hamirpur	Hamirpur
5	Dr. Rajendra Prasad Govt. Medical College	Kangra
6	District Hospital Kangra	Kangra
7	S.M.Eye Hospitsl Kangra	Kangra
8	District Hospital Kinnaur	Kinnaur
9	Regional Hospital	Kullu
10	District Hospital Mandi	Mandi
11	Indira Gandhi Medical College	Shimla
12	District Hospital Shimla	Shimla
13	Simla Sanitarium & Hospital Shimla	Shimla
14	District Hospital Sirmaur	Sirmaur
15	E.S.I. Hospital Solan	Solan
16	Regional Hospital Solan	Solan
17	District Hospital Una	Una
18	District Hospital Una	Una
	Jammu & Kashmir	
1	Dept. Of Ophthalmology, Govt. Medical College	Jammu
	Jharkhand	
1	District Hospital Bakaro	Bokaro
2	District Hospital Chatra	Chatra
3	District Hospital Deoghar	Deoghar
4	Patliputra Medical College Hospital	Dhanbad
5	District Hospital Dhanbad	Dhanbad
6	District Hospital Dumka	Dumka
7	District Hospital Garhwa	Garhwa
8	District Hospital Godda	Godda
9	District Hospital Gumla	Gumla

10	Central Hospital Naisarai	Hazaribagh
11	Mahalaxmi Nursing Home & Mahalaxmi Eye Hospital	Hazaribagh
12	Brindavan Hospital & Research Center	Hazaribagh
13	District Hospital Hazaribagh	Hazaribagh
14	Divine Onkar Mission	Hazaribagh
15	District Hospital Kodarma	Koderma
16	District Hospital Lohadaga	Lohardaga
17	District Hospital Pakur	Pakur
18	District Hospital Chaibasa (Palamu)	Palamu
19	H.E.C. Hospital	Ranchi
20	E.S.I.Modal Hospital Namkum	Ranchi
21	ISPAT Hospital	Ranchi
22	Sadar Hospital Ranchi	Ranchi
23	CCL Hospital Gandhi Nagar Hospital	Ranchi
24	Matri Prerna Eye Hospital	Ranchi
25	Beohar's Eye Hospital	Ranchi
26	Mehta Eye Hospital	Ranchi
27	Gurunank Hospital & Research Center	Ranchi
28	Raj Hospital & Research Center	Ranchi
29	Kashyap Memorial Eye Hospital	Ranchi
30	Eye Care Center,S.D.A.Mission Hospital	Ranchi
31	Nagarmal Modi Seva Sadan	Ranchi
32	Bihar Eye Bank Trust	Ranchi
33	Regional Institute Of Ophthalmology,Rajendra Inst of Med Sc.	Ranchi
34	Eye Care Center	Ranchi
35	NETRAM	Ranchi
36	Nirayamaya Hospital	Ranchi
37	Anjuman Islamia Hospital	Ranchi
38	Popular Nursing Home	Ranchi
39	Laxmi Netralaya	Ranchi
40	District Hospital Sahebganj	Sahibganj
	Karnataka	
1	Bangalore West Lions Eye Hospital	Bangalore
2	E.S.I.C. Model Hospital	Bangalore
3	Dr. B.R Ambedkar Medical College	Bangalore
4	Dept. Of Ophtalmology M.S Ramaiah Medical College	Bangalore
5	ST John's Medical College & Hospital	Bangalore
6	Narayana Nethralaya	Bangalore
7	Karthik Netalaya Institute Of Ophthalmology	Bangalore

8	Retina Institute Of Karnataka	Bangalore
9	Bangalore Baptist Hospital	Bangalore
10	Kempa Chellanne General Hospital	Bangalore
11	Seventh Day Adventist Medical Center	Bangalore
12	Padnabhushan Dr.M.C.Modi Charitable Eye Hospital	Bangalore
13	ESI Corporation Model Hospital	Bangalore
14	Govt.General Hospital,Kanakapura	Barsalore Rural
15	Belgaum Institute of Medical Science	Belgaum
16	Dr.Kukkarni. Eye Hospital	Bellary
17	All Ameen Medical College	Bijapur
18	E.S.I. Hospital Mangalore	Dakshina Kannada
19	E.S.I.Hospital Davanagere	Davanagere
20	JJM Medical College, Davangere	Davanagere
21	SDM College of Medical Sciences Hospital	Dharwad
22	M.R.Medical College	Gulbarga
23	Sri Devaraja URS Medical College	Kolar
24	J.S.S. Medical College	Mysore
25	Govt. District MC Gann, Hospital	Shimoga
26	Kasturba Medical College	Soothkanara
27	District Hospital,Tumrur	Tumkur
28	Vishwa Seva Samiti's , Rotary Charitable Hospital	Uttara Kannada
	Kerala	
1	Lisie Hospital	Bana Kulam
2	Giridhar Eye Institute	Ernakualam
3	M.O.S.C. Medical College Hospital	Ernakualam
4	Little Flower Hospital & Research Center	Ernakualam
5	Amrita Institue of Medical Science & Researcjh Center	Ernakualam
6	Academy Of Medical Science	Kannur
7	District Hospital Kottayam	Kottayam
8	Madical College	Kottayam
9	Caritas Hospital	Kottayam
10	Comtrust Charitable Trust Eye Hospital	Kozhikode
11	Dept. Of Ophthalmology District Hospital	Malappuram
12	Ahalia Foundation Eye Hospital	Palakkad
13	Dr. Somervell Memorial CSI Medical College Hospital	Thiruvananthapuram
14	Jubilee Mission Medical College & Reserch Center	Thissur
15	District Hospital Thrissun	Thrissur
16	Amala Institute of Medical Sciences	Thrissur
17	Jubilee Memoria Hospital	Trivandrupuram

18	Regional Institute	Trivandrupuraram
19	Malankara Orthodox Syrian Church Medical Mission Eye Hosp	Wayanad
	Madhya Pradesh	
1	District Hospital Balaghat	Balaghat
2	District Hospital Bhind	Bhind
3	People's College Of Medical Seiences & Research Center	Bhopal
4	J.P. Hospital	Bhopal
5	Ajwani Eye Hospital Pvt. Ltd	Bhopal
6	Regional Institute Of Ophtalmology	Bhopal
7	E.S.I Hospital, Sonagiri, Bhopal	Bhopal
8	Hi Tech Eye Care Laser Centre	Bhopal
9	Mata Mandir Eye Hospital	Bhopal
10	Siddharth Eye Hospital	Bhopal
11	Bhopal Eye Hospital	Bhopal
12	Govt. Shakir Ali Khan Hospital G.P. Bhopal	Bhopal
13	District Hospital Chhindwara	Chhindwara
14	District Hospital Damoh	Damoh
15	E.S.I.Hospital Dewas Ranibage	Dewas
16	Disirict Hospital	Dondori
17	G.R. Medical College	Gwalior
18	District Hospital Herda	Harda
19	Geeta Bhawan Hospital	Indore
20	E.S.I.C Model Hospital,Indore	Indore
21	District Hospital Khandwa	Khandwa
22	District Hospital Mandsaur	Mandsaur
23	Aras Eye Hospital & Netra centre lew impratation centre	Mandsaur
24	Dr. Sanjeev Mehta Netralaya & Laser Center	Mandsaur
25	Shri Labhmuni Eye Hospital, Manhsaur	Mandsaur
26	Distt. Hospital Nasinghpur	Narsinghpur
27	District Hospital Panna	Panna
28	Dist Hospital Raisen	Raisen
29	Jaora Lions Eye Hospital	Ratlam
30	S.S.Medical College,Rewa	Rewa
31	Govt. Indira Eye Hospital Sagar	Sagar
32	District Hospital Satna	Satna
33	Sri Sadguru Netra Chkitalsaya	Satna
34	District Hospital Shahool	Shahdol
35	District Hospital Sehore	Sheopur
36	District Hospital ShivpuriM.P	Shivpuri

37	District Hospital Sidhi (M.P)	Sidhi
38	Distt Hospital Tikamgarh	Tikamgarh
39	District Hospital Ujjain	Ujjain
40	District Hospital Umaria	Umaria
41	Shri Sadguru Seva Sangh Trust	Vidisha
	Maharashtra	
1	Rural Medical College Of Pravara Rural University	Ahmednagar
2	Govt. Medical College	Akola
3	Akola Eye Hospital	Akola
4	Damani Eye Hospital	Akola
5	Akot Rotary Eye Hospital	Akola
6	Govt. General Hospital Amravati	Amrawati
7	Dr. Panjabrao Deshmukh Memorial Hospital	Amrawati
8	Dept. Of Ophthalmology, Govt. Medical College	Aurangabad
9	Aurangabad Chikalhana Lions Eye Hospital	Aurangabad
10	MGM'S Medical College & Hospital	Aurangabad
11	S.R.T.R Medical College	Beed
12	Shri Ganapati Netralya	Jalgaon
13	R.C.S.M. Govt. Medical College	Kolhapur
14	DY Pati Medical College	Kolhapur
15	MIMSR Medical College	Latur
16	Govt. Medical College Latur	Latur
17	MISR Medical College, Latur	Latur
18	Lokmanya Tilak Municipal Medical College.	Mumbai
19	Adityajyot Eye Hospital	Mumbai
20	K.B.H.B. Char. Ophthalmic Hospital	Mumbai
21	K.J Somaiya Medical College	Mumbai
22	Lion Tarachand Bapa Hospital & Reseaech Center	Mumbai
23	Lotus Eye Hospital	Mumbai
24	Lilavati Hospital & Research Center	Mumbai
25	Govt. Medical College & Hospital	Nagpur
26	Indira Gandhi Govt. College	Nagpur
27	Orange City Hopital & Research Institute	Nagpur
28	N K P Salve Institute Of Medical Science	Nagpur
29	Mahatma Eye Bank & Eye Hospital	Nagpur
30	Civil Hospital Nashik	Nashik
31	Armed Forces Medical College Pune	Pune
32	B.J. Medical College	Pune
33	M I M E R Medical College Taligam Dalihade	Pune

34	Pbma's HV Desai Eye Hospital	Pune
35	National Institute Of Ophthalmology	Pune
36	Lions Club Of Pune Aundh Pasha & Janaseva Foundation Eye Hosp	Pune
37	Jehangir Hospital, Pune	Pune
38	Bharati Hospital Bharati Vidyapeeth Medical College	Pune
39	Ruby Hall Clinic	Pune
40	Pune Chest and General Hospital	Pune
41	Laxmi Eye Institute	Raigad
42	Lion NAB Eye Hospital	Sangli
43	Govt. Medical College & Hospital	Sungli
44	Civil Hospital Thane	Thane
45	Jyotirmay Eye Clinic & Pediatric Low Vision Center	Thane
46	Rajive Gandhi Medical College	Thane
47	Mahatma Gandhi Institute Of Medical Sciences	Wardha
48	Datta Maghe Institute Of Medical Sciences	Wardha
49	Civil Hospital Washim	Washiim
50	Shri Vasantnao Naik Government Medical College	Yanatmal
51	Drushti Eye & Retina Center & Rajvi Nursing Home	
	Manipur	
1	District Hospital,Tamenglong	Imphal East
2	District Hospital,Bishnupur,Manipur	Imphal East
3	District Hospital Chaudel	Imphal East
4	Shija Hospitl & Research Center,Imphal	Imphal East
5	Reginal Institute Of Medical Sciences,Imphal	Imphal East
6	Jawaharlal Nehru Hospital Porompat	Imphal East
7	Muol Vaiphel Rural Health & Research Center,Chvrachandpur	Imphal East
8	District Hospital Ukhrul,Manipur	Imphal West
9	District Hospital Charachandpur Manipur	Imphal West
10	District Hospital Senapati	Imphal West
11	Imphal Eye Clinic	Imphal West
12	Imphal Hospital,RIMS Road	Imphal West
13	Dr.L.Tondon & Craft,Imphal	Imphal West
14	District Hospital Thoubal	Thoubal
	Meghalaya	
1	Bansara Eye Care Center	East Khasi Hills
2	Civil Hospital Shillong	East Khasi Hills
	Mizoram	
1	Eye Services,Presbyterian Hospital,Durtlang	Aizawl
	Orissa	

1	District H.Q. Hospital Bargarh	Baragarh
2	Lion's Eye Hoapital	Baragarh
3	J.P.M. Rotary Eye Hospital & Research Institute	Cuttack
4	Kalinga Eye Hospital & Research Center	Dhenkanal
5	Serango Christian Hospital	Gajapati
6	District Head Quarter Hospital	Jharsuguda
7	Mahatma Gandhi Eye Hospital	Mayurbhanj
8	Evangelical Hospital	Nuapada
9	District HQ Hospital Sundargarh	Sundargarh
	Pondicherry	
1	Govt. General Hospital Mahe	Mahe
2	Sri Venktesh Wara Medical College	Pondicherry
3	Arvind Eye Hospital	Pondicherry
4	Mahatma Gandhi Medical College & Research Institute	Pondicherry
5	Jipmer Hospital	
6	Jothi Eye Care Centere	
	Punjab	
1	Civil Hospital Amritsar	Amritsar
2	Sri Guru Ramdas Institute Of Medical Sciences & Research	Amritsar
3	Dr Om Prakash Satyam Netralaya	Amritsar
4	Dr. Daljit Singh Eye Hospital	Amritsar
5	Maharaj Sawan Singh Charitable Hospital	Amritsar
6	S.B Dr Sohan Singh Eye Hospital	Amritsar
7	Govt.Medical College Amritsar	Amritsar
8	Civil Hospital Basi Bathana	Basi Bathana
9	Civil Hospital Bathinda	Bathinda
10	Sethi Eye Hospital	Bathinda
11	G.G.S. Medical College	Faridkot
12	Civil Hospital Faridkot	Faridkot
13	Lion's Eye Care Center	Faridkot
14	Mata Amar Kaur Vnek Charitable Eye Hospital	Faridkot
15	Distric Hospital Fetehtarh Sahib	Fetehtarh Sahib
16	Civil Hospital Ferozepur	Ferozpur
17	Civil Hospital Ferozepur	Ferozpur
18	Civil Hospital Ferozepur	Ferozpur
19	Civil Hospital Govindgarh	Govindgarh
20	Civil Hospital Gurdaspur	Gurdaspur
21	Civil Hospital Hoshiarpur	Hoshiarpur
22	Civil Hospital Hoshiarpur	Hoshiarpur

23	Civil Hospital Jagrado	Jagrado
24	Civil Hospital Jalandhar	Jalandhar
25	Kararia Eye & E.N.T. Hospital	Jalandhar
26	Mahajan Eye Hospital	Jalandhar
27	Akal Eye Hospital Lasik Laser College	Jalandhar
28	Thima Eys Hospital	Jalandhar
29	Rajan Memorial Eye Hospital	Jalandhar
30	Guru Nanak Mission Hospital	Jalandhar
31	Civil Hospital Jashuiya	Jashuiya
32	Civil Hospital Kapurthala	Kapurthala
33	Shri Baba Jai Ram Dass Jain Eye Charitble Hospital	Lodhiana
34	Civil Hospital Ludhiana	Ludhiana
35	Dr. (Miss) Anita Chopra	Ludhiana
36	Acharya Shri Atma Ram Jain Hospital	Ludhiana
37	Bhagwan Ram Charitable Hospital	Ludhiana
38	U.S.P.C Jain Charitable Hospital	Ludhiana
39	Christian Medical College & Hospital	Ludhiana
40	Civil Hospital Ludhiana	Ludhiana
41	Guru Teg.Bahadur Sahib Hospital	Ludhiana
42	Dhami Eye Care Hospital	Ludhiana
43	District Hospital Mansa	Mansa
44	Civil Hospital Moga	Moga
45	Civil Hospital Mohali	Mohali
46	Civil Hospital Mukariya	Mukariya
47	District Hospital Mukatsar	Muktsar
48	Civil Hospital Malerkotla	Muktsar
49	Civil Hospital N.Shara,Punjab	Nawan Shehar
50	Govt. Medical College Patiala	Patiala
51	Rajpur Civil Hospital Patiala	Patiala
52	Civil Hospital Nabha	Patiala
53	Dr Bansal Eye Hospital	Patiala
54	Dr. G.S. Randhawa Eye Hospital Lasik Center	Patiala
55	District Hospital Ropar	Rupnagar
56	District Hospital Roop Nagar	Rupnagar
57	Civil Hospital Sangrur	Sangrur
58	District Hospital Barnala	Sangrur
59	Civil Hospital Sonam	Sonam
60	Civil Hospital Tatun	Tarn Taran
	Rajasthan	

1	J. L.N.Medical College	Ajmer
2	District Hospital Ajmer	Ajmer
3	District Hospital Alwar	Alwar
4	District Hospital Banswara	Banswara
5	District Hospital Bavan	Baran
6	District Hospital Barmer	Barmer
7	District Hospital Bharatpur	Bharatpur
8	District Hospital Bilwara	Bhilwara
9	District Hospital Bikaner	Bikaner
10	Vyas Eye Care Center	Bikaner
11	District Hospital Bundi	Bundi
12	District Hospital Chittigarh	Chittorgarh
13	District Hospital Churu	Churu
14	District Hospital Dausa	Dausa
15	District Hospital Dholpur	Dholpur
16	District Hospital Dungarpur	Dungapur
17	District Hospital Ganga Nagar	Ganga Nagar
18	Shri Jagdamba Eye	Ganganagar
19	District Hospital Hanumangarh	Hanumangarh
20	M.G.M. Govt. Hospital	Hnumangarh
21	District Hospital Jaipur	Jaipur
22	Amar Jain Hospital	Jaipur
23	SanjeevaniI Hospital	Jaipur
24	Falor Eye Hospital	Jaipur
25	Delhi Eye Hospital	Jaipur
26	Kabra Eye Hospital	Jaipur
27	M.R.J. Institute & Jain Eye Hospital	Jaipur
28	H.B. Kanwater Hospital	Jaipur
29	Anad Hospital & Eye Center	Jaipur
30	Rama Krishna Eye Hospital	Jaipur
31	Bhiwani Eye Hospital	Jaipur
32	Rajasthan Nursing Home & Eye Center	Jaipur
33	K.C. Memorial Eye Hospital	Jaipur
34	Dr. R.M. Sahai Memorial Institute of Ophthalmology Sahai Hospital & Research Cen	Jaipur
35	District Hospital Jaisalmer	Jaisalmer
36	District Hospital Jalore	Jalore
37	District Hospital Jhalarwar	Jhalarwar
38	District Hospital Jhunjhunu	Jhunjhunu

39	District Hospital Karauli	Karauli
40	Govt. Medical College	Kota
41	E.S.I. Hospital Pali	Pali
42	District Hospital Pali	Pali
43	Lions Eye Hospita Rani	Pali
44	District Hospital Rajasthan	Rajsamand
45	District Hospital S.Madhapur	Sawai Madhopur
46	District Hospital Sikar	Sikar
47	District Hospital Sirohi	Sirohi
48	Global Hospital Institue Of Ophtalomlogy	Sirohi
49	District Hospital Tonk	Tonk
50	Alakh Nayan Mandir	Udaipur
	Sikkim	
1	Sikkim Manipal Institute Of Medical Sciences	East Sikkim
	Tamil Nadu	
1	Kilpauk Medical College Hospital	Chennai
2	E.S.I.C Hospital K.K. Nagar	Chennai
3	Sankara Eye Hospital	Chennai
4	Aswimi Eye Clinic	Chennai
5	Vishnu Eye Clinic & Laser Foundation	Chennai
6	Sree Balaji Medical College& Hospital	Chennai
7	Ponraj Eye Clinic	Chennai
8	Kumaran Hospital Pvt.Ltd.	Chennai
9	Zoboda Hospital	Chennai
10	Kumaran Eye Care	Chennai
11	Sundar Eye Hospital	Chennai
12	Frontline Eye Hospital	Chennai
13	Best Hospital Pvt.Ltd.	Chennai
14	Christian Medical College	Chennai
15	The Eye Research Foundation	Chennai
16	K.K. Eye Health Care & Research Center	Chennai
17	C.S.I.Kalyani General Hospital	Chennai
18	Sundaram Medical Foundation	Chennai
19	Regional Instt. Of Ophthalmology & Govt. Ophthalmic Hospital	Chennai
20	Sri Ramachandra Medical College	Chennai
21	M.M.Eye Hospital	Chennai
22	St. Antony's Hospital	Chennai
23	Sooriya Hospital	Chennai
24	Prem's Eye Clinic	Chennai

25	CSI Rainy Multispeciality Hospital	Chennai
26	Voluntary Health Services	Chennai
27	Gremaltes Hospital	Chennai
28	Sankara Nethralaya Chennai	Chennai
29	Ashrathe Eye Clinic Durgabai Deshmukh General Hospital	Chennai
30	Coimbatore Medical College	Coimbatore
31	Lotus Eye Care Hospital	Coimbatore
32	Siloam Thomas Eye Hospital	Coimbatore
33	Sankara Eye Hospital	Coimbatore
34	Arvind Eye Hospital Coimbatore	Coimbatore
35	Damien Eye Care Centre	Dindigul
36	Lutheran Eye Hospital	Erode
37	Bejansingh Eye Hospital	Kanyakumari
38	Govt. District H.Q. Hospital Karur	Karur
39	Meera Nursing Home(Navien-Aswin Nethradham)	Krishnagiri
40	Vijay Nursing Home	Krishnagiri
41	Govt. Rajaji Hospital Madurai	Madurai
42	Aravind Eye Hospital & P.G & Institute of Ophthalmology	Madurai
43	Kesavan Eye Hospital	Madurai
44	Govt. H.Q. Hospital Nagapattinam	Nagapattinam
45	Kotagiri Medical Fellowship Hospital	Nilgiris
46	Chennai Kalliope Hospital	Ramanathapuram
47	Govt. H.Q. Hospital Sivaganga	Sivaganga
48	Govt. H.Q. Hospital Theni	Theni
49	Christian Fellowship Eye Hospital	Theni
50	Lions Eye Hospital	Thiruvavur
51	Govt. Thoothukudi Medical College	Thoothukudi
52	Institute of Ophthalmology-Joseph Eye Hospital	Tiruchirappalli
53	Govt. Hospital Tiruvavur	Tiruvavur
54	Aravind Eye Hospital Tirunelveli	Tirunelveli
55	Scudder Memorial Hospital	Vellore
56	Good Samaritan Rural Development Project,Matrapalli Eye Hosp	Vellore
57	Govt H.Q. Hospital Villupuram	Villupuram
58	Govt. H.Q. Hospital	
	Tripura	
1	R G M Hospital, Kailasahar, North Tripura	North Tripura
2	Tripura Sundari District Hospital	South Tripura
3	Tripura Medical College & Dr. B. R. Ambedkar Memorial Teaching Inst	West Tripura
4	I. G. M. Hospital, Agartala, Tripura	West Tripura

5	Agartala Government Medical College and G. B .P. Hospital	West Tripura
	Uttar Pradesh	
1	S.N Medical College	Agra
2	Dish.Hospital Agra	Agra
3	E.S.I. Hospital Agra	Agra
4	Sumdrami Charitable Eye Hospital	Agra
5	S.N.Medical College	Agra
6	E.S.I. Hospital,Sasni Gate,Aligarh	Aligarh
7	Malkhan Singh Distt. Hospital	Aligarh
8	Dr.Mohan Lal Memorial Gandhi Eye Hospital	Aligarh
9	Jawaherlal Nehru Medical College,AMU Aligarh	Aligarh
10	B.S. Mehta Eye Hospital	Allahabad
11	M.L.N. District Hospital Allahabad	Allahabad
12	T.B.Sapru Hospital Allahabad	Allahabad
13	Regional Institute Of Ophthalmology ,M.D.Eye Hospital	Allahabad
14	M.J.F. Combine District Hospital	Ambedkar Nagar
15	District Hospital Bahraich	Bahraich
16	Sitapur Eye Hospital	Bahraich
17	District Hospital Buland Shahr	Buland Shahr
18	Kamla Clinic Civil Line Bulandshahr	Bulandshahr
19	Vrinda Eye Care Center Sikandarabad,Bulandshahr	Bulandshahr
20	Bhaymati Nursing Home,Dadri	Dadri
21	Deoria Eye Hospital	Deoria
22	District Hospital Etah	Etah
23	Ayodhya Eye Hospital	Faizabad
24	Narinder Mohan Hospital	Gaziabad
25	Vardan Netra Chikitsalaya	Gaziabad
26	Jaidev Singh Tyegi Retino Centre	Gaziabad
27	ESI Hospital,Sahibabad	Gaziabad
28	ESI Hospital Modinagar	Gaziabad
29	M.M.G District Hospital Gaziabad	Gaziabad
30	Sitapur Eye Hospital	Gonda
31	Diwaan Shatrughan Singh Combind Hospital	Hameerpur
32	Swati Netra Chikitsalya	Jaunpur
33	Dr.D.C.Kushwaha Eye Clinic	Jaunpur
34	District Hospital Jaunpur	Jaunpur
35	Sitapur Eye Hospital Jaunpur Branch	Jaunpur
36	Ram Krishna Netra Seva Sansthan,Civil Line	Jaunpur
37	AMMA Hospital	Jaunpur

38	APEX Eye Hospital,Jaunpur	Jaunpur
39	Shankar Eye Hospital	Jaunpur
40	Jaunpur Eye Care Center	Jaunpur
41	Satya Shiv Hospital Eye Center	Lucknow
42	Jan Kalyan Eye Hospital Educational & Research Instiutue	Lucknow
43	T.C. Eye Center	Lucknow
44	Bagla Civil Hospital	Mahamaya Nagar
45	Narayan Eye Hospital-Sadabad	Mahamaya Nagar
46	Gautam Eye Hospital	Mahamaya Nagar
47	Dish Hospital Mathura	Mathura
48	Guru Gangeshwar B.Eye Hospital	Mathura
49	Nirphad Eye Hospital	Mathura
50	Sh.Raman Lal Shorawala Eye Hospital	Mathura
51	Sh.Ram Krishna Mission Sewashram	Mathura
52	Sh.Ji Baba Chikitsa Sansthan	Mathura
53	Brij Chikitsa Sanstha	Mathura
54	Goswami Hospital	Mathura
55	L.L R.M. Medical College	Meerut
56	Subharti Medical College	Meerut
57	District Hospital	Mirzapur
58	C.L. Gupta Eye Institute (Vivekanand Hospital)	Moradabad
59	Govt. District Hospital Muzaffar Nagar	Muzaffar Nagar
60	Tirupti Eye Center	Noida
61	K.D. Dalmia Eye Hospital	Rampur
62	Shanti Eye Clinic Hospital	Saharanpur
63	Jiwan Jyoti Christian Hospital	Sonbhadra
64	Rajkumari Devi Eye Care Center	Varanasi
65	Indian Railway Cancer Institute Research Center	Varanasi
66	District Hospital Varanasi	Varanasi
67	Head Department Of Ophthalmology,Instetute Of Med Sc, BHU,Varanasi	Varanasi
	Uttrakhand	
1	CTR Base Hospital Almora	Almora
2	Govt. Doon Hospital Dehradun	Dehradun
3	Devbhoomi Netralaya	Dehradun
4	Navjyoti Eye Hospital & Dehradun Wave Lasin Center	Dehradun
5	Amritsar Eye Clinic	Dehradun
6	Vishal Eye Hospital	Dehradun
7	Dr. Jaydeep Dutta	Dehradun

8	Shri Guru Ram Rai Institute Of Medical & Health Sciences	Dehradun
9	Dept. Of Opthamology Doon Hospital & Gahdhi Eye Hospital	Dehradun
10	Anil Eye Clinic	Dehradun
11	Private Eye Clinic	Dehradun
12	Harsh Eye Clinic	Haldwani
13	H.M.G.Hospital Hardwar	Hardwar
14	Navjyoti Eye Hospital	Haridwar
15	Ganga Mata Charitable Eye Hospital	Haridwar
16	Swami Bhumanand Charitable Eye Hospital & Research Inst	Haridwar
17	Ram Krishna Mission	Haridwar
18	Bausch & Lomb Advanced Cataractcare	Nainital
19	Drishti Center For Advanced Eye Care	Nainital
20	Mehrotra Eye Hospital	Nainital
21	Krishna Hospital & Research Center	Nainital
22	S.S.Jina Base Hospital Haldwani	Nainital
23	B.D.Pandey,Hospital Nainital	Nainital
24	Sitapur Eye Hospital	Naitnital
25	Govt. Cmbined Hospital Pauri Garhwal	Pauri Garhwal
26	District Hospital Pauri Garhwal	Pauri Garhwal
27	Kotdwar Eye Hospital	Pauri Garhwal
28	Sitapur Eye Hospital	Pauri Garhwal
29	District Hospital Pithoragarh	Pithoragarh
30	Suman Combined Hospital	Tehri Garhwal
31	Sanjeevani Hospital	Udham Singh Nagar
32	Janki Eye Clinic	Udham Singh Nagar
33	Bhagwati Devi Eye Hospital	Udham Singh Nagar
34	Prakash Eye Hospital & Caser Center	Udham Singh Nagar
35	Navjyoti Eye Clinic	Udham Singh Nagar
36	Modern Eye Hospital	Udham Singh Nagar
37	Maharaja Agrawal Charitable Trust	Udham Singh Nagar
	West Bengal	
1	B.S Medical College	Bankura
2	Durgapur Steel Plant Hospital	Bardhaman
3	M.J.N.(Dstrict) Hospital	Coochbehar
4	Sealdah E.S.I. Hospital	Kolkata
5	Regional Institute Of Ophthalmology	Kolkata
6	Disha Eye Hospital & Research Center	North 24 Parganas
7	Vivekananda Mission Asram Netra Niramay Niketan	Purulia
8	Rotary Club Of Purulia Service Center, Eye Clinic	Purulia

