

Using evidence for VISION 2020 “district” planning

Report from meeting at the  
Kilimanjaro Centre for Community Ophthalmology  
Moshi, Tanzania  
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## **Background**

National VISION 2020 planning has been underway in most countries in the past 5 years. National planning focuses on policy, on overall strategies, on practical national targets, on advocacy, and on human resources necessary for VISION 2020. The implementation of VISION 2020 happens at the “district” (population about 1 million) level and the second stage of VISION 2020 workshops has focused on district implementation planning. To assist this process, KCCO and others have been facilitating (and provided training in planning) in a number of countries. There are a number of tools, including the VISION 2020 planning CD and the VISION 2020 planning manual, that assist with various aspects of planning.

A particular difficulty in planning at the “district” has been the absence of information prior to planning and (even if information is available) the use of available information for the purpose of planning. Existing manuals do not provide adequate guidance in this regard. Finally, there is good evidence that estimates of blindness and disease morbidity that have been used in Africa may not have been the most appropriate.

KCCO, with support from the Centre for Innovation in Eye Care at the Seva Foundation, hosted a 4-day meeting in Moshi, Tanzania in order to:

- Review the information that is necessary for VISION 2020 planning at the “district” level, primarily in Africa and make suggestions on where this information can be obtained and how this information can be used for planning.
- Review current evidence of blindness and disease burden in Africa compared with previously generated evidence.

The participants at the workshop included people involved in both District VISION 2020 planning and in surveys aimed at providing information for planning (in particular, RAABs).

For the purpose of this report we have defined stakeholders as all of the partners (Ministry of Health, NGOs, service groups, non-government service providers, etc.) involved in service provision and planning for a “district”. It has been widely appreciated that planning with all stakeholders is critical for long term success of VISION 2020 at the implementation level.

### **VISION 2020 planning at the national and “district” level**

VISION 2020 programmes are planned at two levels; national and district (population 1-2 million). When planning a district level programme it is important to understand both the structure and the function of a national-level programme and how it relates to the district. This will ensure that there is no duplication of work and that the local plan will have detailed information that is specific to the district but feeds into to the national plan.

A national plan is a strategic plan that sets out broad objectives and engages political will. The district plan is the implementation unit for the national plan. The district can determine how best to meet the goals set by the national plan. Details

regarding some of the differences in national and district planning are given as an appendix.

### **Information ideal for planning VISION 2020 at the district level**

The type of information that is ideal for planning VISION 2020 at the district level includes information on specific diseases, related service delivery, infrastructure and personnel available, personnel practices, and relevant policies. It is best if the data is routinely collected and available, accurate, up-to-date and covers the full range of eye conditions that the program will address. The data should not be too difficult to collect.

It is helpful if there are consistent definitions used when collecting the data, so that the data can be aggregated, and so that specific data regarding factors such as age and gender can be used in planning. Ideally, the data collected will be able to identify emerging conditions, and signal any changes in the magnitude of the existing disease. This information will not only contribute towards useful and realistic plans, but will also facilitate ongoing monitoring and evaluation of the activities that are being implemented.

### **Current evidence on blindness and eye diseases in Africa**

Eye care in Africa has undergone significant changes in the past ten to fifteen years. Service delivery is more widely distributed with increased numbers of service providers and facilities to provide these services. There still is a tendency however, to perceive the prevalence of blindness without considering these changes. Understandably, the previous estimates of blindness (generally quoted as 1% to 1.4% throughout most of Africa) were based upon available data. Many of the surveys upon which estimates were derived were undertaken over 20 years ago. In addition, it has been recognized that these estimates may no longer be appropriate for many settings as they were based upon isolated surveys of areas where there was no service delivery or where the researchers were highlighting a particular disease entity (often trachoma or onchocerciasis). In the case of countries without survey data, information from neighboring countries was used, regardless of the presence or absence of focal conditions and services provided. Evidence from recent surveys in Rwanda (1), Kenya (2), and Cameroon (3), as well as unpublished work in the Gambia and Tanzania would suggest that for "districts" that have some eye care service delivery and minimal prevalence of focal diseases (e.g., trachoma and onchocerciasis) the prevalence of blindness may be closer to 0.3% to 0.5%, rather than 1%.

### **Generating better estimates (recognize that programmes are at various levels of maturity)**

Recent population based surveys suggest that at least in a number of areas in Africa the prevalence of blindness and cataract is less than expected on the basis of the earlier WHO estimates. Therefore also the estimates of the desired CSR to control cataract blindness may be on the higher side and difficult to achieve in practice. Attempts have to be made to base estimates of the required CSR in a district on

actual data from that same district or from districts with similar disease characteristics and maturity of the programme.

There is minimal survey data to facilitate estimates of childhood blindness. A notable exception is the population based survey carried out in the Lower Shire Valley of Malawi in 1983 (4), an area known for severe vitamin A deficiency. (At the time of the survey there were many refugees from Mozambique in Malawi and the question is whether those results on childhood blindness are still valid today.) The reduction in vitamin A and measles related blindness in most countries (exceptions generally include internally displaced people and those living in areas of conflict) suggest that the prevalence of children (under 16 years) is likely to be between 1 to 5 per 10,000 population. Cataract appears to be the major cause in a number of settings. There is a need to obtain more information on childhood blindness using new technologies (e.g., key informants). It is also important to obtain information on blind children enrolled at schools for the blind (from survey villages) in the “district”.

### **Information needed to plan for specific diseases and general non-blinding conditions**

This report includes information that is needed in order to plan for the following eye conditions:

1. Cataract
2. Refractive errors
3. Childhood blindness
4. Trachoma
5. Posterior segment disease (primarily glaucoma, diabetic retinopathy, and ARMD)
6. Common non-blinding conditions

### ***Information needed to plan for cataract***

There has been a lot of effort in the last few years to increase the number of cataract surgeries however cataract remains the major cause of avoidable blindness. There is considerable variation in the provision of cataract surgical services at district level in Africa. Some programmes only select patients who are blind or severely visually impaired (<6/60) whereas more mature programmes do not have strict criteria for selection for surgery (referred to as “case mix”). This means that estimating the number of surgeries required to plan for the future becomes district-specific and can be difficult especially when no recent survey data is available. When setting targets for cataract surgical services, keep in mind the following:

- The maturity of the programme determines the type of strategies (for case finding and case mix) required.
- The case mix will help determine the desired cataract surgical rate
- Barriers to use of cataract services are quite complex and change as a VISION 2020 programme matures.
- Biometry has become widely available and should be a pre-requisite for any hospital-based cataract surgical service.
- There should be a commitment from surgeons to actively audit their outcomes.

Few districts will have the possibility of having survey data (RAAB or otherwise) but this should not limit the ability to plan for cataract services. Considerable information can be gathered from existing records and stakeholders in order to plan properly.

<b>Information needed to plan</b>	<b>Where information is obtained</b>	<b>How will this information be used for planning</b>
Population distribution (% of population age 50+)	Census	Determine the potential number of people affected
Cataract surgical rate (by gender)	Surgical records at all hospitals providing the service in the district. It is essential to determine where patients come from and to remove patients who come from outside the district. If a group visits the district and takes patients elsewhere for surgery, these figures need to be included in the CSR. Surgeries in children (age <16) should not be included. CSR should be calculated separately for men and women. If sub-district planning is undertaken, the CSR should also be calculated by sub-district.	Used as an indicator of current service delivery at the district level. Setting a target for cataract should be based upon current service delivery. If CSR can be calculated for a sub-district this may help identify particular areas with low service use. Evidence would suggest that the CSR for women should be between 10-25% higher than the CSR for men. This information is relatively easy to obtain; an excel spreadsheet can be used to calculate the CSR. This information is also important for planning
Productivity of surgeons	If there is more than one surgeon in the district, the total number of surgeries can be divided by the number of surgeons. Or it may be preferable to monitor productivity individually for each surgeon.	Decisions on desired levels of productivity are based upon the service delivery; a general rule in Africa has been around 10 surgeries per day times 2 days per week times 40 weeks per year (about 800 total)
Outcomes of surgery	Surgical outcome can be obtained from either hospital records or from survey, although there will be some differences. Hospital records that are routinely recorded on the WHO Monitoring Cataract Surgical Outcomes (MCSO) programme are the most valuable. Also, surgeons should all be encouraged to audit their own results.	These outcomes are one measure of quality of service; they may indicate a need for changes to surgery (e.g., use of biometry on all cases prior to surgery, conversion to SICS, improved selection of cases, upgrade training in surgical skills, or improved post operative refractive correction)  Data from the RAAB reflect the

	<p>Surveys (RAAB) provide information on the current community-based outcome of surgeries received. (Use only RAAB tables with visual outcome in patients operated &lt;5 years ago)</p>	<p>community perception of sight restoration after cataract surgery</p>
<p>Prevalence of cataract at different vision cut-offs</p>	<p>Survey (recent RAAB, other recent survey or, if not available, use estimates from nearby areas with similar level of maturity of programme)</p>	<p>Determine number of people affected by cataract for the purpose of advocacy</p>
<p>Cataract surgical coverage (by sex)</p>	<p>Survey (recent RAAB, other recent survey or, if not available, use estimates from nearby areas with similar level of service delivery and maturity of programme)</p>	<p>Provides the proportion of people at different visual cut-offs who have received services. A CSC of 75-85% or higher would be considered good coverage. Comparing the coverage by different levels of vision is helpful in assessing the need to revise the desired case mix. Assessing the relative CSC separately for men and women helps identify gaps based on gender.</p>

<b>Service provision</b>		
Type of surgery (ECCE, SICS etc), location of service provision, geography of the area, etc.	Stakeholders can provide information about the programmes in place	Information on the type of service provision is helpful for making decisions regarding changes to how cataract surgery is provided.
Fee that patients pay for surgery (price). Additional indirect costs the patients must pay. Real cost to the hospital of providing surgery (cost).	Stakeholders and discussion with patients will reveal the price. The real cost can be determined by analyzing financial records at the hospital (consumables, equipment, salaries, etc)	Knowing the price charged for surgery helps in assessing if price (or the way the price is packaged) is a barrier. Comparing the price with estimated cost (generally \$75-\$100 per surgery in Africa) helps to identify the potential level of cost recovery and support needed for the programme
Case finding options	Stakeholders	Knowing the current strategies for case finding (and the level of productivity) is used to decide if additional strategies may be needed.
Definition of vision for operation (vision cut off)	Stakeholders	Knowing if there are specific cut-offs that are used for referral and for selection for surgery is necessary to determine the amount of surgery required to reach the target
Case mix (% of people with vision at various levels prior to surgery)	Records at hospital can be used to determine the proportion of people as well as proportion of eyes at various vision levels. These data can be obtained from MCSO software.	The definition of vision for operation (above) and case mix should provide similar estimates and can be used similarly.
<b>Characteristics of the population</b>		
Barriers to use of cataract services	Focus group discussions and in-depth interviews are the most useful approaches to understand why people do not use existing services. Great variation may exist between different locations.	The information on barriers to use of cataract services should be used to re-design how to improve use of services. If awareness of services is low, strategies are needed to improve it; if access to services is poor, strategies to improve access are needed, and if acceptance of surgery is poor, counseling and other strategies are needed. It must be remembered that some patients will continue to refuse surgery, even if the service has addressed all barriers)

### **Information needed to plan for refractive errors**

The epidemiology of refractive error in Africa differs markedly from that in Asia; specifically the prevalence of myopia in school age children is between 1-6%. (5-6) As noted in the secondary school children study, only around 35% of children prescribed glasses choose to wear them. (6)

Presbyopia will be a problem in the older population; although it may be more prevalent in urban than rural populations, rural people still have near vision needs to address. Women may have greater risk for presbyopia than men. Population based research in Africa suggests that approximately 61% of people over the age of 40 will be presbyopic (50% of 40-49 year olds, 68% of 50-59 year olds, and 70% of 60+ year olds). (7)

<b>Information needed to plan</b>	<b>Where information is obtained</b>	<b>How will this information be used for planning</b>
<b><i>Disease</i></b>		
Number of people age 40+ (by 10 year age groups)	Census	Estimate of potential number of older people
Prevalence of presbyopia in people age 40+	Survey findings (see above for best estimates)	Calculate the potential number of presbyopic people
Number of children age 11-15 years and number enrolled in schools	Census info and MoE	Estimate the number of children in this age group (primary target for service delivery in Africa)
Prevalence of refractive errors in children 11-15	Survey findings (see above for best estimates)	Main target for providing spectacles. Around 5% of these children will need spectacles (5)
Barriers and cultural attitudes to wearing spectacles	Focus group discussions and in-depth interviews can be used to assess barriers.	This information further refines estimates of how many spectacles need to be provided
<b><i>Service provision</i></b>		
# of spectacles provided in past year. The range of powers (spherical equivalent) should be given to demonstrate that these are vision-correcting and not cosmetic)	Records where spectacles are dispensed (data from private opticians difficult to collect)	This may serve as a baseline in order to establish targets for service delivery in the plan. It should also be used to monitor service provision- to be most useful it should include all the service providers in the District
National policy on spectacle	MoH	All stakeholders and service



dispensing		providers need to be aware of this before starting services
Service providers, location, type of providers	Stakeholders (be sure to obtain information in sub districts)	Knowing where spectacles and refraction can be obtained will help planners decide on strategies to adopt. It is important to know if government eye care providers use spectacle sales as a method for obtaining extra income.
Price of spectacles and cost for obtaining spectacles	Services that dispense spectacles	Allows planners to assess the level of cost recovery and sustainability achieved through spectacle sales.

### Information needed to plan for childhood blindness

Although there is inadequate information on childhood blindness, it is likely that the prevalence is around 1-5 per 10,000 children if vitamin A deficiency/measles related blindness is absent. (data under preparation) The rarity of childhood blindness and the fact that surgical restoration of sight needs to be carried out at Child Eye Health Tertiary Facilities (CEHTF) means that childhood blindness generally needs an approach that combines activities for the area covered by the CEHTF (generally considered to be around 10 million) as well as those carried out at the district level. Thus, planning for childhood blindness needs to be carried out both at the level of the CEHTF and the district and it should be done in a collaborative fashion. The focus in many maturing VISION 2020 programmes in Africa is cataract, trauma, retinal conditions, and corneal conditions (variety of causes). Priorities include surgical intervention (establishing a CEHTF and creating a programme for access to the centre), low vision, and rehabilitation and integrated education. Vitamin A deficiency remains a problem in focal areas, generally where there has been conflict or displaced people.

Information needed to plan	Where information is obtained	How will this information be used for planning
<b><i>Disease</i></b>		
Estimates of childhood blindness (and their causes)	Surveys currently not available. Best estimates are between 1-5 children per 10,000 children.	Information on the estimate of childhood blindness should be used to calculate the estimated number of children in the district who are blind.
Estimated number of childhood cataract	It is estimated that the annual incidence of (non-	The CEHTF should work with the districts in the catchment area to

cases per million population (CCSR) in district	traumatic) childhood cataract is 30 children per million population. Records at the hospital (“Child Eye Health Tertiary Facility”) should be compiled by “district” to determine the number of children from a district receiving surgery.	identify the annual CCSR per district. If less than 30 children per million population, strategies should be put into place to improve case finding and referral.
<b>Service provision</b>		
Information from schools for the blind, annexes, and integrated programmes (entry criteria, numbers of children, vision of children)	Stakeholders should compile this information	Understanding the criteria for entry and their existing visual acuity and use of low vision devices should be used to design programmes aimed at spectacle provision, low vision services, as well as integrated education
Service providers, location, distance to travel, cost of programme (transport, etc.)	Stakeholders should compile this information	Information on all aspects of service providers and service provision is needed to design strategies to improve recognition, referral, and follow up of children needing eye care services.

### Information needed to plan for glaucoma

Glaucoma is the second most common cause of blindness in many African populations. Planning for it has not been a first priority of VISION 2020. However, as programmes “mature” and progress in dealing with the problem of cataract it is reasonable for them to start planning for glaucoma. A “district” level programme will either have to provide its own glaucoma services or have in place a referral system. Population based data on glaucoma disease prevalence in Africa indicate that prevalence is variable in different populations, possibly due to differences in definitions and complexity of assigning “race”. (8) Programmes are advised to consider surveys and data from populations as similar to their own as possible. A crude generalization is that the prevalence of glaucoma in eastern and southern African populations over age 40 may be 3-5% while it may be twice this high in West Africans. (9) Estimates of blindness from glaucoma may be available from surveys; about 10% of glaucoma patients have either vision <3/60 due to glaucoma or 10° visual field. (10)

<b>Information needed to plan</b>	<b>Where information is obtained</b>	<b>How will this information be used for planning</b>
Prevalence of glaucoma blindness	Surveys (or use evidence from existing surveys above)	Help prioritize, once cataract problem is being adequately addressed
Prevalence of glaucoma	Surveys (or use evidence from existing surveys)	Estimate number of people who potentially need treatment

	above)	
Cost of medication	Local investigation hospital and chemists	So that counselors can give patients accurate information about the cost of medical treatment
Location of services	Stakeholders	Needed to set up referral from centers without services
Number of glaucoma surgeries done (by sex) in entire District	Theatre registers for all hospitals in District	Crude method to monitor service provision

### Information needed to plan for other posterior segment diseases

It is becoming necessary to think about other posterior segment eye diseases in Africa. As cataract services improve and corneal blindness goes down, these diseases are becoming a significant cause of blindness as shown in recent RAAB surveys. However very little information exists on the prevalence, clinical presentation and treatment strategies in African populations. Eye health workers at all levels are often not adequately trained to detect, diagnose or manage these conditions. Equipment for tackling these conditions (e.g. ophthalmoscopes, tonometers, visual field machines, lasers) are not easily available and approaches to equipping clinics are required. In the various VISION 2020 planning documents there are broad objectives for tackling these conditions.

Information needed to plan	Where information is obtained	How will this information be used for planning
<b><i>Diabetic Retinopathy</i></b>		
Mapping of diabetic clinics in the district	Ministry of Health records and stakeholders	Defines initial target population for screening
Number of people with diabetes (blind/at risk)	Survey (or local information on numbers of people with diabetes)	
Number and location of personnel trained to treat diabetic retinopathy	Stakeholders	Needed to design referral service
Number and location of lasers available	Stakeholders	Needed to design referral service
Number of VR surgeries at tertiary level (need to compile based upon the district of residence)	Hospital records	Crude measure to monitor services
<b><i>ARMD</i></b>		
Number of cases of ARMD seen (by type)	Hospital records	Crude measure to monitor services

Number and location of low vision services available	Stakeholders	Needed to design referral service
Number of adults with low vision with access to low vision services	Low vision records	

### Information needed to plan for trachoma

Trachoma is often referred to as the “leading cause for infectious blindness” and is the sixth leading cause worldwide. There have been considerable efforts at identifying the information needed to plan for trachoma and there is no need to repeat these efforts in great detail. There are many well-developed tools to assess, plan for, and prevent trachoma. “*Trachoma Rapid Assessment Toolkit*”, “*Trachoma Guidelines*”, “*Trachoma planning & developing health education materials*”, and “*Vision 2020 planning toolkit*”, which can be downloaded from WHO, VISION 2020, IAPB, and The Carter Center websites. The major difficulty has been the failure, in many settings, to integrate trachoma into district VISION 2020 plans. While it may not be practical to integrate activities related to face washing and environmental control into district VISION 2020 plans, trichiasis surgery can easily be integrated. Antibiotic distribution will vary, depending upon the mode of treatment used. We have summarized the minimum information needed for planning for trichiasis surgery in districts where trachoma exists.

Information needed to plan	Where information is obtained	How will this information be used for planning
Disease		
Estimated number of trichiasis patients	Survey (if survey not practical, eye workers--who already know about the villages through other programme may be able to make an estimate)	Determine number of patients who need surgery (UIG)
Number of trichiasis surgeons, location, instruments & supplies, supervision	Stakeholders	Assist in identifying gaps in service provision
Number of trichiasis surgeries carried out in past year	Surgical registers	Determine activities against the needed UIG, identify levels of productivity of surgeons
Trichiasis surgical outcome	Medical records	Estimate quality of service and need for re-training and certification

### Information needed to plan for non-blinding eye conditions

Non-blinding eye conditions are often not planned for in VISION 2020 District plans. However, secondary and tertiary eye units often spend more time managing non-

blinding conditions than cataract. This can be because the primary facilities and staff are not equipped to handle these conditions and patients may be bypassing these facilities. Planning for non-blinding eye conditions should be part of all district VISION 2020 plans. For the purpose of planning “non-blinding eye conditions” include the following: itchy eyes, red eyes, headache, squint, photophobia, eye growths/tumors (including pterygium), and chalazion

<b>Information needed for planning</b>	<b>Where information is obtained</b>	<b>How will this information be used for planning</b>
Numbers of patients with these conditions seen at each secondary or tertiary clinic and outreach	Registers at clinic and hospital	To determine the level of over-use of these clinics and allocate resources (for medicines, training) to primary eye care and organize referral networks. Calculate proportions of blinding and non-blinding at all clinics
Numbers of patients seen by primary eye care workers at primary health care clinics	Registers at primary health care clinics and (if possible) with primary eye care workers	To determine the level of under-use of primary health care clinics and allocate resources (for medicines, training) to primary eye care and organize referral networks
Availability of treatment at various levels	Stakeholders (MOH, NGOs)	Drug provision and delivery system Integration of ophthalmic drugs into essential drugs list
Numbers treated (medicines used) for non-blinding conditions at primary health care clinics	Registers at clinics	Assess utilization of eye care services and appropriateness of medical treatment to determine need for additional training or allocation of medicines.
Number of people in district who have received training in eye care and provide service	Stakeholders (MOH and NGO) Survey	Assess training needs and impact of previous training
Numbers non-blinding surgical conditions	Registers OT registration	Assess needs for referral, surgical training, and equipment at different levels

### **Information on infrastructure and manpower**

There is general information on required infrastructure and manpower in VISION 2020 planning manuals and tool kits; this information should be obtained from these documents. Consider the tasks assigned to the different cadres; some may be overburdened while other are under-utilized. Think also about non-medical staff or people from other sectors who may contribute to eye care programs (eg teachers in school programs, etc.).

## Using information from planning for the purpose of monitoring

There is a strong link between information used to plan and used to monitor against the plan. There are various monitoring tools available and we have summarized those indicators that should be monitored/reported on a monthly basis in order to assess progress against the plan. District VISION 2020 monitoring should include all service providers (MoH, NGO) and at all levels (base hospital, outreach, and satellite facilities). We have not included indicators for monitoring trachoma and onchocerciasis and these focal diseases already have received considerable attention when it comes to monitoring. The list below should be viewed as a minimum list for monthly monitoring. Annual monitoring of outcome, follow up, case finding, and other programme activities will be needed, as the programme dictates. With any monitoring process it must be clear how the information is collected, collated and disseminated. There must be a mechanism that ensures that any change in the information collected is identified and acted on. This may form part of a target setting process at the district level.

<b>Diseases</b>	<b>Indicators</b>	<b>Outreach</b>	<b>Satellite clinics</b>	<b>Base hospital</b>
Cataract:	# Cataract operations # Cataract patients identified Cataract outcomes			
Refractive errors:	# children screened # Spectacles provided (by range of power)			
Childhood blindness:	# Cataract operations # Other surgeries # xerophthalmia cases detected			
Trachoma	# Trichiasis operations			
Diabetic retinopathy	# Patients seen with DR # Referrals for laser/VR surgeon # Lasers done for DR			
Glaucoma:	# Patients seen with glaucoma # New patients seen # Operations done			
ARMD:	# Patients seen (by type)			
Non-blinding:	# Total patients seen # Minor surgeries			
Low vision	# Adults and children assessed			

	# Devices dispensed			
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District planning includes:

- Specific details on who does what, where and by when
- Situation analysis of district resources. i.e. Service delivery
- Identify and coordinate all potential stakeholders and create a mechanism for their cooperation
- District specific disease prevalence
- Set targets for service delivery
- Working budget
- Integration 'into existing services
- Specific activities needed for each target
- Identifying barriers
- Community involvement
- Identification of gaps
  - Service
  - Infrastructure
  - Human resource
- Monitoring of activities (reporting)
- Training as required to fill gaps
- Advocacy and local commitment
- Coordination and partnership
- Mapping – service delivery
- Operational research

National planning includes:

- I.E.C material development
- National monitoring and standards
- World Sight Day
- Policies – licensing
- Coordination (of partners)
- Allocation of budgets to districts
- Definition of a “VISION 2020 District”
- Estimating prevalence
- Systems for procuring and disseminating consumables
- Resource mobilization – Identify funding
- Human resource development (training, posting, priority areas, cadre)
- Coordination with other health plans
- Priority diseases and strategies
- Ensuring good coordination for specific eye disease plans
- Advocacy and political commitment
- Hospitals (national situation) and definition of types
- Definition of primary, secondary, and tertiary care
- Research priorities



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