

Eye Health System Assessment Lao PDR

2013



Table of Contents

Acronyms.....	2
Executive Summary.....	3
Acknowledgement.....	6
1. Introduction	7
2. Methodology of the Eye Health System Assessment in Lao PDR	9
3. Lao PDR: Health System Overview.....	12
4. Overview of the eye health system	20
1). Governance of the Eye Health System	25
2). Eye Health Financing.....	27
3). Eye Health Service Delivery	30
4). Human Resource for Eye Health.....	35
5). Medicine, Product and Equipment for Eye Health	41
6). Health Information System for Eye Health	43
5. Annexes.....	45
Annex A: List of documents consulted.....	45
Annex B: List of person met and interviewed.....	46
Annex C: Map of Lao PDR: Province and District	47
Annex D: FBOs and NGOs Partnering In Eye Health Services	48

Acronyms

ASEAN	Association of South East Asia Nations
BEDs	Basic Eye Doctors
BTC	Belgium Technical Cooperation
CBHI	Community based health insurance
CSOs	Civil Society Organizations
CSR	Cataract Surgical Rate
DHC	District Health Centre
DoP	Department of Personnel
DPA	Disabled People Association
DPOs	Disabled People's Organisations
ECW	Eye Care Ward
EHSA	Eye Health Systems Assessment Approach
FBO	Faith-based Organisations
FDD	Food and Drug Department
HC	Health Centre
HIS	Health information systems
HMIS	Health Management Information System
HRH	Human Resources for Health
HSIP	Health Service Improvement Project
IAPB	International Agency for Prevention of Blindness
ICEH	International Centre for Eye Health
ICHC	Integrated Community Health Centre
MDG	Millennium Development Goals
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoU	Memorandum of Understanding
NCHP	National Committee for Handicapped Persons
NEML	National essential medicine list
NGO	Non-government Organization
ODA	Overseas Development Assistance
OPD	Out Patient Department
OPH	National Ophthalmology Centre
PEC	Primary Eye Care
PHC	Primary Health Care
PHO	Provincial Health Office
PIMS	Personnel Information Management System
PMO	Prime Minister Officer
PRP	Pan Retinal Photocoagulation
SASS	State authority for social security
SSO	Social security organization
UNDP	United Nations Development Program
VHWs	Village health workers
WHA	World Health Assembly
WHO	World Health Organisation

Executive Summary

Overview of the Eye Health System

Strengths

- Eye care has now been integrated into government policies.
- A number of health policies e.g. HRH, finance, incentive for human resource, etc. are supporting eye care services and interventions.
- During the last five years, the coverage and quality of eye care services has increased.
- There are plans for training significant numbers of new eye care staff by 2015.

Weaknesses

- There is an uneven distribution of government eye facilities and staff, particularly in remote and poor areas that remain underserved.
- No private sector entities are available to provide service on health care, including eye care.
- There are low cataract surgical rates.
- Monitoring systems for patient feedback, eye care activity or outcomes.

Governance of Eye Health System

Strengths

- The National Ophthalmology Centre (OPH) is responsible for planning blindness prevention, research, training and the local production of eye drops.
- The National Treatment Guideline includes the common eye disease and is developed for the health care providers at the district level. The primary health care guideline for health centre staff also advices on treatment of basic eye care, such as conjunctivitis and other simple eye trauma.

Weaknesses

- There are no consultation meetings organised between HIS of MoH to incorporate technical units of standardized reporting formatted to include all disease topics.
- The Disabled People's Organisations (DPOs) and other Civil Society Organizations (CSOs) have limited opportunity to be involved in the planning of eye health services.
- There are limited feedback or complaint mechanisms to enable service users to have a voice.

Eye health financing

Strengths

- The National Ophthalmology Centre (OPH) receives government funds to cover procurement of eye care medicine.

- The eye care service is covered by the health insurance scheme
- Several mobile eye clinics are partially funded by the Ministry of Health, which covers staff salaries and infrastructure.
- Additional financial support is gained from various non-governmental organizations.

Weaknesses

- MOH budget is limited, therefore, is mainly allocated as seed funding for drug procurement to support eye care system in hospital setting only.
- Donor spending for eye health is unclear because donors are more focused on the service delivery level.
- There are no budgets for eye care at district level, which limits integration of eye care services.

Eye health service delivery

Strengths

- OPH is the only organization recognised by the MOH to deliver eye care technical support.
- Numbers of eye care ward in central, regional and provincial hospitals provide practical eye care services.
- Some clinics, coordinated by the OPH and provincial hospitals have targeted rural populations along the Mekong River and isolated highland communities.
- There is a comprehensive network of PHC facilities covering Lao PDR.
- Some Health Care workers received training in primary eye care which includes recognition and treatment of basic eye conditions.
- Some eye care conditions (conjunctivitis and trachoma) are included in the treatment guidelines to support HC staff.

Weaknesses

- There is limited access to eye care services in provinces, districts and villages, particularly in remote and poorest areas.
- Network of eye health care service covers the majority of provinces with trained primary eye care (PEC) workers, however, patients are being poorly handled.
- There is a poor referral system of related-eye care patients to a facility that could handle the case.

Human Resources for Eye Health

Strengths

- A National Policy on Human Resources, which is a priority plan in the Health Sector Reform (2013-2015), was endorsed in 2011. The policy also covered eye care personnel, including pre- and in-service professional development for service providers.

- Optometry training course had been conducted for ophthalmologist in which graduates are deployed to health facilities which need them most.
- Trained staffs are assigned to provinces and district health facilities.

Weaknesses

- There are significant gaps in the number of eye care staff and inequitable distribution when compared to the population distribution, particularly remote and poorest areas.
- Manpower in eye care is deficient at primary level and there is a lack of in-service training at this level.
- High turn-over of trained ophthalmic nurses who seek for new job in certain health facilities.

Medicines, Products and Equipment for Eye Health

Strengths

- Eye care medicine is included in the national policy on essential medicine.
- Eye care medicine available in provinces is similar to the original approved list of Food and Drug Department (FDD).

Weaknesses

- There is a lack of necessary equipment to support eye care.
- With limited funds from the FDD, monitoring is not common practice for eye care-related medicines.

Health Information Systems for Eye Health

Strengths

- Health Management Information System (HMIS) was established in MoH and mandated by decree.
- Other functioning surveillance systems of PHO are a part of the government, and specific to communicable disease.

Weaknesses

- As report on eye care is not compulsory, eye care related information and issues, therefore, are often missing in national summary report.
- OPH has no standard template to report on eye care for their network at sub-national level.
- The health information system has not yet been adequately developed to provide quality data for informed policy development.

Acknowledgements

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1. Introduction

The World Health Assembly (WHA) adopted two resolutions WHA56.26¹ and WHA62.1² on the elimination of avoidable blindness and the prevention of avoidable blindness and visual impairment respectively. Subsequently in 2009, the sixty-second (62nd) World Health Assembly endorsed a resolution and action plan for blindness prevention, requesting Member States to implement the action plan for the prevention of avoidable blindness in accordance with national priorities and within the primary health care approach. In January 2012, the WHO Executive Board during its 130th session developed a new action plan for the prevention of avoidable blindness and visual impairment for the period 2014-2019.

A recent survey in Lao PDR estimated that 3% of its population aged 50 years old and above is blind. This prevalence level is a bit higher than the blindness prevalence of Australia, which is under 1%. Primarily, blindness is caused by cataract and low vision is caused by uncorrected refractive error in LAO PDR. Besides the impact of vision loss on a person's quality of life, there is also a substantial economic loss associated, including increased unemployment, decreased productivity and increased welfare cost.³

With the new information and technology, up to 80% of blindness today is either preventable or treatable. Cost-effective interventions are available for the major causes of avoidable blindness, including cataract surgery and spectacle provision. Most avoidable causes of vision loss can be effectively addressed at the primary level.

Primary eye care comprises a comprehensive set of promotion, preventative and curative actions that can be carried out by suitably trained primary health workers or specialized auxiliary personnel. In reality, the delivery of primary eye care commonly lacks good integration within the existing health system, leading to unnecessary visual impairment and blindness.

The development and implementation of appropriate primary eye care activities will depend on the existing primary health care system. Based on realities of existing health care structures at the primary level, and existing capacity to deliver eye care in the country, there can be substantial differences in the delivery of the most appropriate primary eye care activities.

Implementing appropriate structures to deliver primary eye care within the primary health system requires an in-depth review of existing capacity and structures. This includes a review of current eye care financing systems at the primary level.

In an effort to improve access to quality eye care services for all, including disadvantaged communities in Lao PDR, MoH with support from WHO and the International Centre for eye Health at the London School of Hygiene and Tropical Medicine, conducted an Eye

¹ Resolution WHA56.26: Elimination of Avoidable Blindness. 28 May 2003.

² Resolution WHA62.1: Prevention of Avoidable Blindness and Visual Impairment. Geneva. May 2009

³ Technical Report: Situation Analysis and National Workshop for Strengthening Primary Eye Care within Primary Health Care in Lao PDR. DHC, MOH 19 August 2013

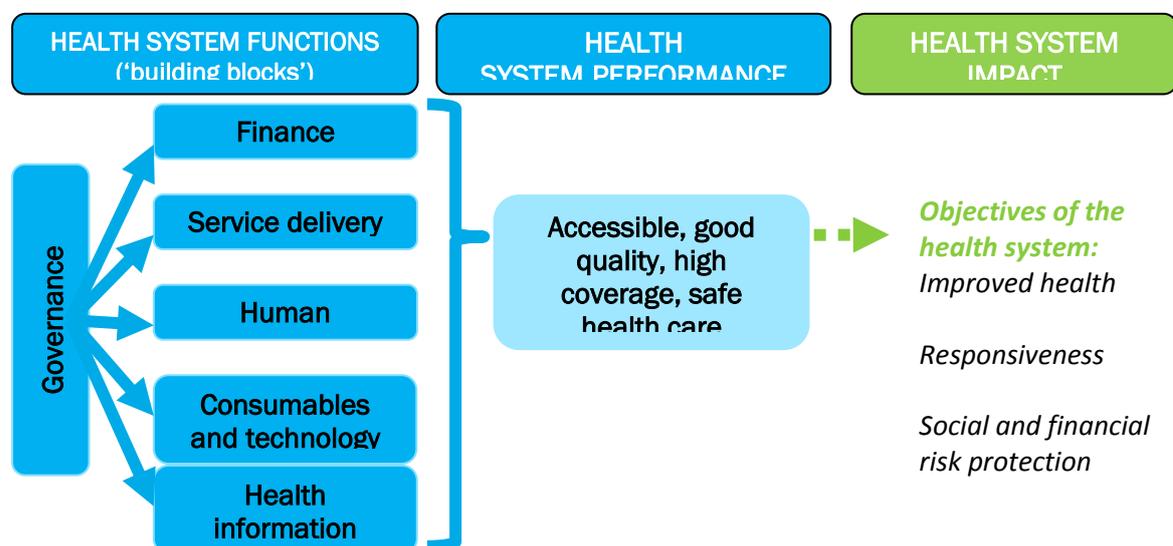
Health System Assessment (EHS). The purpose of the exercise is to assess current systems and practices in place for the delivery of eye care at the primary level, including existing linkages between the eye health system, and the general health system. The findings of the in-depth analysis will lead to develop a set of country specific recommendations.

The objectives of the Eye Health System Assessment in Lao PDR are to:

- Enable national and international eye care actors to regularly assess country’s eye health system, in order to diagnose the relative strengths and weaknesses of the eye health system, to plan, prioritise key weakness areas, and identify potential solutions or recommendations for eye care interventions.
- Assist national eye health authorities and international organisations to include eye health systems interventions in eye care programme design and implementation, and into the general health system.

The EHS approach is designed to provide a rapid and yet comprehensive assessment of the key health systems functions as they relate to eye health, and their interactions, based on the health system ‘building blocks’ framework elaborated by the World Health Organisation (WHO). Figure 1 below shows the foundation of health system, which is related to eye health system.

Figure 1: Foundations of Health Systems



Adapted from World Health Organisation 2007. Islam 2007

The EHS focus is not necessarily to discover new evidence but rather to examine all components of the eye health system and their inter-relationships at the same time, and make important cross-cutting recommendations that affect the functioning of the whole eye health system.

2. Methodology of the Eye Health System Assessment in Lao PDR

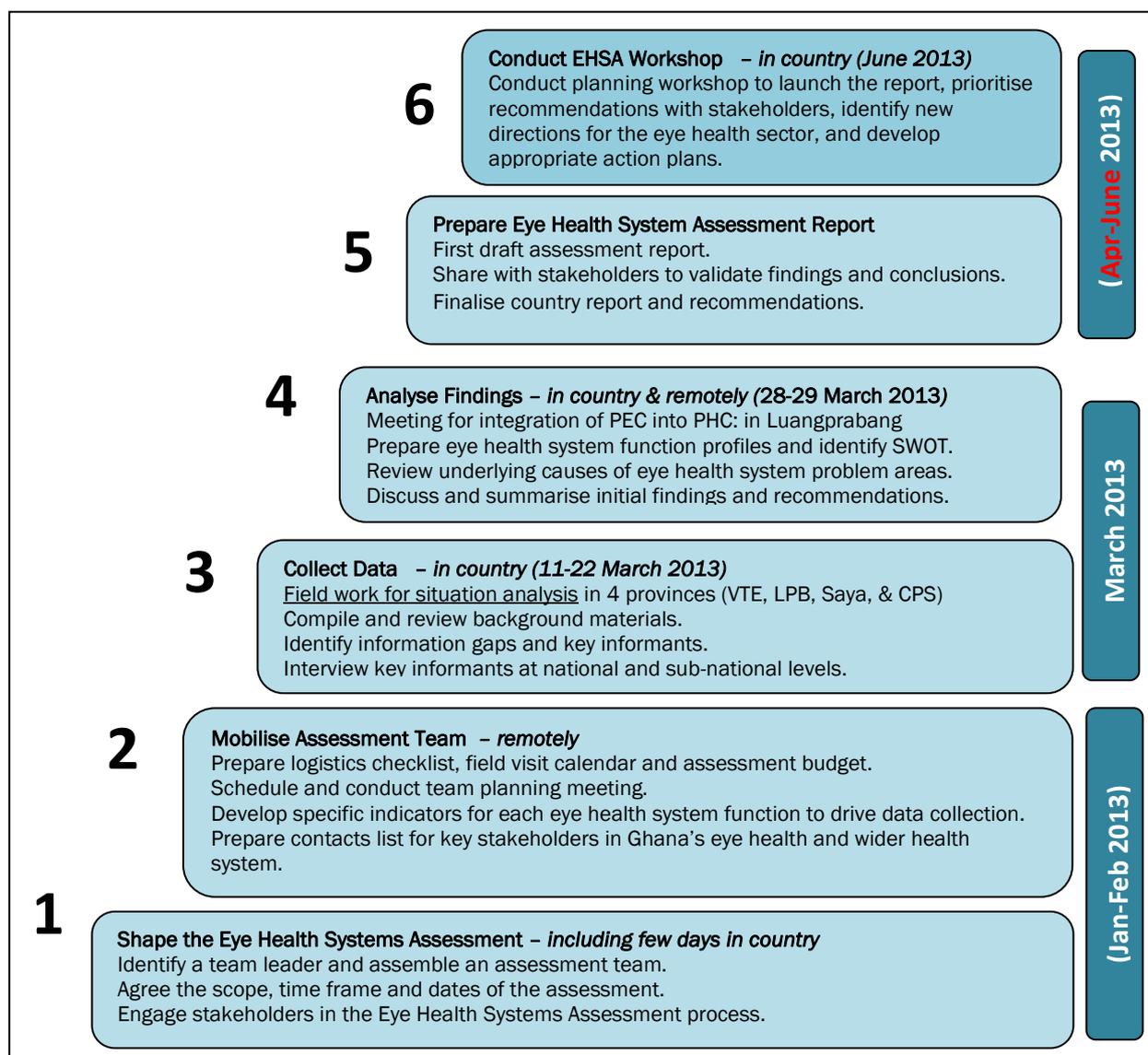
The EHSA approach provides a rapid and comprehensive assessment of the key health systems functions relevant to eye health and their interactions. This includes the leadership and governance of the eye health system, the financing of eye care, delivery of eye health services, the available human resources for eye health, the medical products, vaccines, and technologies or equipment relevant to eye care, and the information systems that enable collection, analysis and use of information about eye health.

The EHSA tool⁴ is used to undertake this assessment focuses on a list of selected indicators used to measure the performance of the eye health system, and on possible sources of information where relevant information can be found. The EHSA guideline⁵ was also consulted when planning the assessment, synthesis of findings, and identifying eye health system strengths and weaknesses, due to the extensive experience in undertaking whole health system assessments underpinning it. The approach to the EHSA process in Lao PDR was agreed with MoH and consisted of several successive steps, shown in Figure 2.

⁴ Indicator mapping: data collection (document review and interviews), WHO, Vientiane office. 2013

⁵ Blanchet K. *et al.*, 2012, *The Eye Health System Assessment: How to connect eye care with the general health system*, ICEH, London School of Hygiene and Tropical Medicine.

Figure 2: Steps in the approach to Eye Health System Assessment in Lao PDR 2013



Adapted from Islam 2007

Data collection

Methodology

Data was collected for each module (1 core module and the 6 technical ‘health system building blocks’ modules) by members of the assessment team using the indicators detailed in the Eye Health Systems Assessment Approach (EHSa) tool (supported by a series of standardised probing questions developed by the International Centre for Eye Health (ICEH) at the London School of Hygiene and Tropical Medicine⁶).

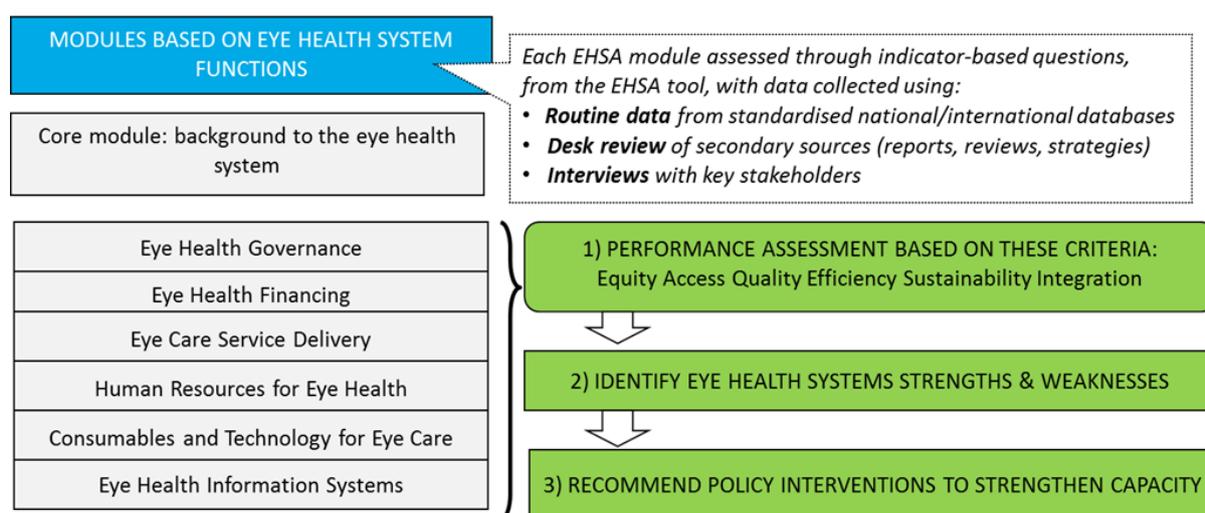
⁶ Available on <http://www.healthsystemassessment.com/eye-health-system-assessment-ehsa-2/>

As a rapid assessment, the EHSA does not aim to collect primary quantitative data but rather to consolidate and analyse the available data across all components of the eye health system. As seen in

Figure 3, the EHSA assessment was therefore carried out through:

- Desk-based review of documents and data sources; and
- Interviews with eye health system stakeholders.

Figure 3: Eye Health Systems Assessment Approach



Document review

The documents reviewed during this assessment are listed in **Error! Reference source not found.**. The documents were identified through the interviews and through discussion with the key persons involved in eye health care issues.

Interviews

Interviews were conducted during fieldwork for situation analysis 13-20 March 2013. The team visited Vientiane Capital (Central level) and in 3 provinces - Luangprabang, Sayaboury, and Champasack. The team interviewed 27 individuals from national provincial and Health Center levels and Health academic institution involved in the delivery of eye care services. The list of those interviewed is given in **Error! Reference source not found.**

The sampling procedure to identify relevant people to interview was chosen according to the objectives of the study: generating theories and concepts rather than generalising findings to a wider population. Therefore, a purposive rather than a probabilistic sampling method was deliberately used by the team.⁷

⁷ Bowling, A. and S. Ebrahim, *Handbook of Health Research Methods: Investigation, Measurement and Analysis*. 2005, New York: Open University Press, McGraw-Hill International.

Dates of assessment

In-country data collection and analysis was conducted for about two weeks during 11 -22 March 2013, with interviews of key informants at the national level, as well as travel to selected provinces and districts. A meeting for integration of PEC into PHC was held in Louangprabang, 28-29 March 2013.

Location of assessment

Data collection was carried out at the Ministry of Health (MoH) in Vientiane Capital and in three provinces - Louangprabang, Xayabouri, and Champasak (The location of the three provinces is highlighted in the map of Lao PDR in [Annex C: Map of Lao PDR: Province and District](#)). Data collection at national level was important in order to collect information on strategic health service planning and organisation relevant to eye health, and to gain understanding of how eye health in Lao PDR fits into general health system.

The three provinces were chosen to give a picture of areas both where eye health services in Lao PDR is available (Louangprabang and Champasak) such as clinician and ophthalmic nurse had been trained on PEC, and where there may be gaps in service provision or logistical challenges (Xayabouri) with no PEC yet. The choice of provinces and areas visited was not intended to be statistically representative of the whole country, but to provide case studies and insights into some of the strengths and weaknesses across eye health in Lao PDR. The assessment also examines whether there are any differences between provinces, since it is likely that the trained staff are more treatment oriented skilful than public health insight.

3. Lao PDR: Health System Overview

In Lao PDR, the MoH oversees the health sector in the whole country. As a secretariat for the government and macro of health management, MoH supervises efforts to improve the personnel capacity for health departments. Core functions of MoH as set out by the Government of Lao PDR (GoL)⁸ are as follow:

- Policy formulation, revision and supervision of effective implementation;
- Provision of nationally coordinated health services in both public and private sectors;
- Monitoring and oversight of the overall sector performance and training;
- Capacity development and technical support;
- Collaboration and coalition building with international and other national organizations;
- Resource mobilisation; and
- Standard setting and quality assurance.

The health priorities of the Lao PDR Government focus on the need for improved coordination and integration of all levels of public health care. The strategy aims to improve the general health of Lao PDR's population by the year 2020. It also focuses on improving and extending the health network, addressing disease prevention and making health care accessible to poor and isolated communities.

⁸ Decree on MOH action and organization No. 178/PM, date 5 April 2012

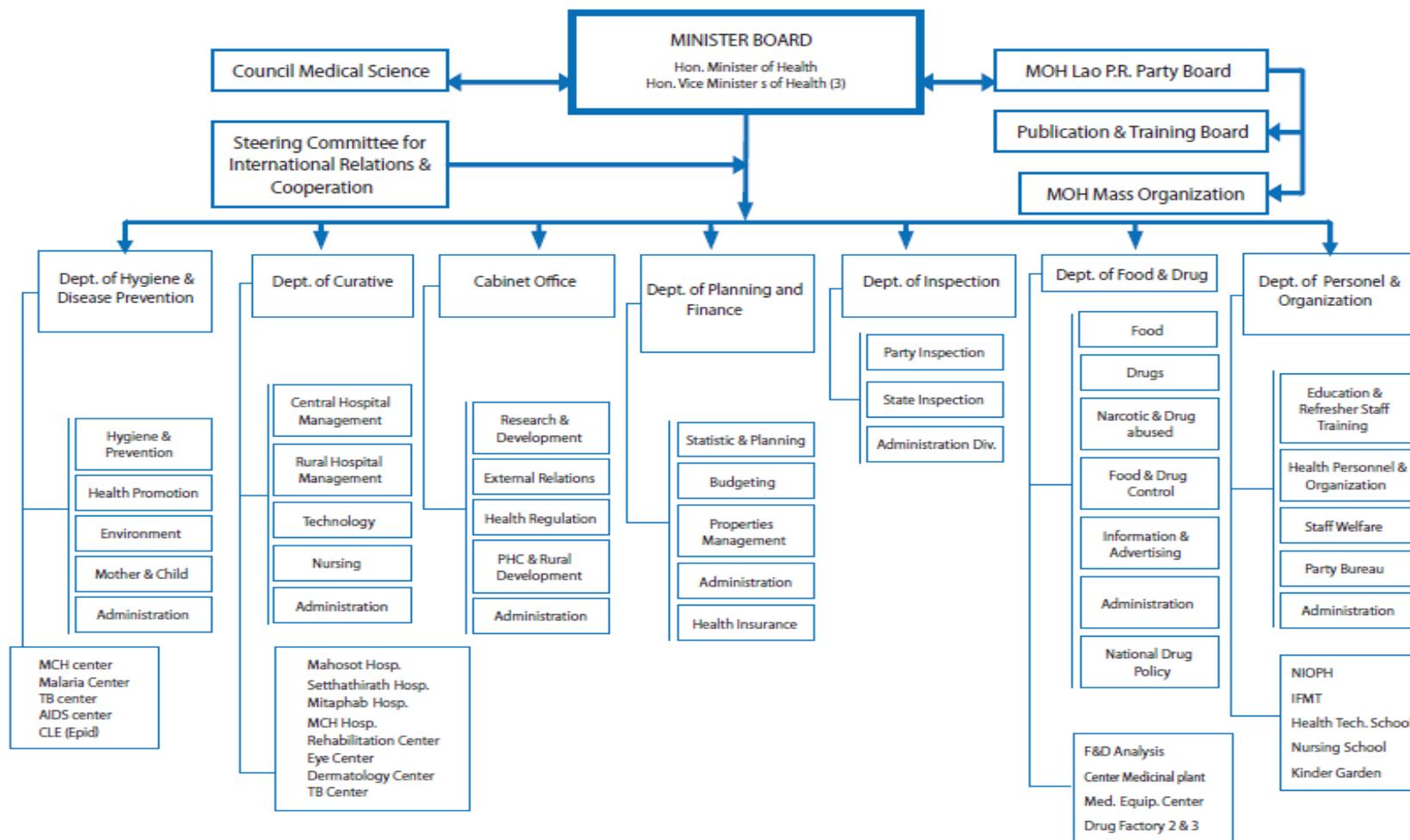
The health care system in Lao PDR is as follow⁹:

- 4 Central hospitals (Vientiane capital city)
- 3 Regional hospitals
- 13 Provincial hospitals
- 127 District hospitals
- 835 Health centres (HC)
- 8,704 Villages
- 13,477 Volunteer Village Health Workers (VVHWs).
- 5,764 Village drug kits

The basic structures of the departments within the Ministry of Health in Lao PDR are relevant to eye health (Figure 4 below).

⁹ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

Figure 4: Organizational chart in the MoH, Lao PDR¹⁰



¹⁰ Source: MoH, Lao PDR

Organisation of services

Administratively, Lao PDR is comprised of three main regions: North, Central and South. Table 1 below shows the number of health facilities of the different districts in each province for FY 2010-2011. It is important to note that the average number of health centre staff is only 2.3 staff per health centre which indicates insufficient quantity of staff at grassroots level.

Experiences of the Belgium Technical Cooperation (BTC) and Health Service Improvement Project (HSIP) that implemented an Integrated Community Health Centre (IHC) showed that HC should have at least five staff to be able to deliver daily health care services as well as integrated MNCH outreach activities.

Since there is no private sector which offers eye care services in Laos, cataract surgeries are conducted in Eye Care Ward (ECW) in provincial hospitals and in OPH. No screening system exists to detect cases so far due to lack of financial commitment. OPH provides technical support to ECW in sub-national level and no eye care quality assessment had been made so far, which results in numbers of patients who have complications after operation.

Table 1: Number of Health Facilities from District And Below in Lao PDR FY 2010-2011¹¹

Province name	District hospital		Number of HCs	Avg of staff per HC	Number of drug kits
	Number	Bed			
Vientiane Capital	8	95	41	2.4	100
Phongsaly	6	95	28	2.7	417
Luangnamtha	5	70	38	1.9	229
Oudomxay	6	98	44	2.2	339
Bokeo	5	65	32	2.5	234
Louangprabang	12	161	66	2.1	483
Houaphan	7	108	53	2.4	549
Xayabouri	10	157	72	2.4	243
Xiengkhuang	8	90	54	2.4	306
Vientiane	12	140	50	3.5	159
Borikhamxay	6	80	38	2.9	188
Khammouane	8	120	76	2.0	336
Savannakhet	14	230	120	2.0	702
Saravan	7	105	53	1.8	445
Sekong	3	30	18	2.2	168
Champasak	9	135	63	2.7	216
Attapeu	4	80	14	1.4	125
Whole Country	130	1,859	860	2.3	5,239

- *Participating provinces to this assessment are in highlighted rows*

¹¹ National Health Statistic Report FY 2010-2011. MoH Lao PDR & WHO

Health Financing

Chronic under-funding of the government health system and the very low salaries of government health workers have led to a variety of coping mechanisms on the part of government health care providers, often with negative consequences for sector efficiency and equity that contributed to a lack of transparency and accountability. Chronic under-funding of the health system has also generated heavy dependence on donor funding. Because the need for resources is so high, the Government is forced to accept donor funding on practically any terms, without insisting that it needs to be aligned with sector priorities or that it needs to be effectively coordinated with the support of other donors and the Government. Because of a lack of transparency and poor financial management practices, many donors insist on funding “vertical” approaches, centrally based projects that closely control expenditures down to the district level. This fractionalizes and compartmentalizes activities at the district level where integration is needed, further contributing to sector inefficiency¹².

Several social health protection schemes have been developed in recent years to substitute pre-payment for out-of-pocket expenditure, to provide protection against the risk of catastrophic health care expenditure, to improve access to needed health care and improve the cost effectiveness of household expenditure on medical care (for example, by substituting professional consultations for self-treatment). Their target populations and current enrolment levels are presented in below Table.

Table 2: Comparison of government health financing indicators among selected Asian countries, 2006

Location	Total health expends. as % of GDP, 2006	Domestically financed govt. health expends. as % of GDP	Externally financed govt. health expends. as % of GDP	Private health expends. as % of GDP	Domestically financed govt. health expends. as % of total govt. expend.	Total health expenditure per capita (current US\$)	Domestically financed govt. health expends. per capita (current US\$)
Afghanistan	5.4	0.4	1.1	3.9	1.2	23	1.70
Bangladesh	3.1	0.7	0.5	2.0	4.5	13	2.89
Cambodia	6.0	0.2	1.3	4.4	1.6	30	1.14
China	4.5	1.9	0.0	2.6	9.9	90	37.71
India	4.9	0.9	0.0	3.9	3.3	39	7.37
Indonesia	2.2	1.1	0.1	1.1	5.1	34	16.35
Lao PDR	3.6	0.2	0.5	2.9	1.3	22	1.47
Malaysia	4.3	1.9	0.0	2.4	7.0	255	115.26
Mongolia	5.1	4.2	0.1	0.8	10.7	53	43.25
Myanmar	2.3	0.1	0.3	1.9	0.3	4	0.12
Nepal	5.7	0.8	0.9	4.0	4.5	17	2.52
Pakistan	2.0	0.3	0.1	1.7	1.0	16	2.11
Philippines	3.3	1.2	0.1	2.0	5.9	45	16.34

¹² Health Financing Strategy, Lao PDR 2011-2015. MoH

Location	Total health expends. as % of GDP, 2006	Domestically financed govt. health expends. as % of GDP	Externally financed govt. health expends. as % of GDP	Private health expends. as % of GDP	Domestically financed govt. health expends. as % of total govt. expend.	Total health expenditure per capita (current US\$)	Domestically financed govt. health expends. per capita (current US\$)
Sri Lanka	4.2	2.0	0.1	2.1	8.1	60	28.80
Thailand	3.5	2.2	0.0	1.2	11.2	113	72.43
Timor-Leste	16.4	7.2	7.3	1.8	8.2	52	22.98
Viet Nam	6.6	2.0	0.1	4.5	6.3	46	13.89

Source: 2009 WHOSIS (World Health Organization)

Private and state enterprise employees are covered through the Social Security Organization's (SSO) health insurance scheme, which was established in 2001 under the Ministry of Labour and Social Welfare. Because the formal sector is still very limited in size and geographical scope in Lao PDR, the SSO scheme is currently implemented in only four provinces e.g. Vientiane Capital and Vientiane, Khammouane and Savannakhet provinces. However, the SSO health insurance scheme does not exist in the provinces under this assessment except Vientiane Capital.

Human Resources for Health (HRH)

The National Policy on Human Resources for Health was endorsed in 2011. The policy is now being translated in a plan of action, which is under the umbrella of Health Sector Reform (7th National Health Sector Development plan). This policy document reinforces the provision of incentives for health workers as an element of the strategic development of the health workforce in Lao PDR. The document endorses the use of specific incentives in targeted areas, including improving access to health workers in rural areas as well as addressing broader elements such as employment terms and conditions, wage rates, working conditions and equipment, training, classification and staff mix. It is noted that the MoH will provide financial and other incentives for rural practice, particularly in the locations most underserved, with consideration given to long-term sustainability. This national framework for HRH is a necessary pre-requisite for the development and implementation of any sustained national approach to incentives or HRH. The policy also covers eye care personnel. However, in the current draft Decree, the stipulation of incentive for government's staff that work in remote areas is not yet fully implemented.

Presently, even though MoH increased about 2% quota for staff allocation to the service unit, there is not much interest from new graduated medicine students on ophthalmology. There are also reasons why trained health personnel prefer to stay in urban area. Low salaries paid to health staff and the absence of substantial official incentive schemes has led to low motivation, poor staff performance, and increased authorized private practices by public health staff in urban area. Mal-distribution of staff, both geographically and by facility level is reported to be a significant issue in Lao PDR.

In 2010, MoH had conducted a study to improve incentives for health care worker in rural area with a series of recommendations to improve the situation. Until now the recommendations have not yet been implemented.

The human resource situation at district level is facing another challenge. There are only 2.3 health staffs working in HC. Nevertheless, they are involved to all horizontal and vertical programmes of health. All vertical programmes are mainly outreach activities force involved staff to stay away from health centre, which creates an interruption of service in health centres.

Pre-Service Education for Primary Health Care

Regarding public health human resource development, MoH presents yearly in average 15% of student quotation for medicine course. It takes about seven years of studies for the current curriculum for Medical Education in university. There are two main institutions that oversee the new medical students: 1). Medicine and Science Faculty of University of Laos (MoH) take responsible to produce health practitioners and 2). Department of Personnel (DoP) of MoH manages staffing issue. There is no system in place in both institutions which could assess if Medicine graduates were properly dispatched, recruited and still work in the facility. In fact, the provincial health office, which is in need of HRH, is not involved in any process of HRH production. This remains uncoordinated among related partners resulting in a big gap between the needs and the actual production of HRH in health care system.

Partnership in HR Policies, Frameworks and Strategic Plans

There is an initiative, which is in the process of development, to cooperate with the Ministry of Home Affairs (MoHA) to establish a database of health personnel and monitor their work performance, including movement of staff. This initiative will lead to a change of policy to establish a monitoring scheme and identify the gaps and needs of HRH development. The policy drafted at the end of 2009 was endorsed in 2011 as the current reference document.

The Medicine and Science Faculty plans to revise and update all current curriculums to be in line with ASEAN University curriculum. The revision of the curriculum may consider also practicum time and place. This revolution may open a chance for OPH and other related sectors involves to improve curriculum so that they can receive graduated medical student with assigned knowledge and skills. Student will get opportunity to practice in almost all provincial and district hospitals in the country as well as in central and teaching hospitals. This process will encourage involvement of all technical and service delivery units. Monitoring and supervision of the teaching process in university will be addressed to oversee the quality of teaching-learning in the university.

The health vision by the year 2020 was developed with involvement of all technical and service delivery units. Each unit then develop the sub-policy/plan to implement the 2020 policy.

Medicines, Equipment and Procurement

The National Essential Drug List has been revised in 2012 to include ophthalmological medicines. There are numbers of groups of medicine available in the drug list including anti-infective drugs, anti-inflammatory drugs, local anaesthetics, anti-glaucoma drugs,

miotics, betablockers, and sympathomimetic. OPH decided to procure the medicine in line with standard procurement performance of the MoH.

Generally, eye care equipment and consumable are very much relying on external support and donation. However, the acceptance of donation in practice is strictly under the regulations of MoH on “Good Donation Practice” that specify in the policy guideline, which aiming to establish and strengthen a hospital-based equipment management¹³.

Health Information Systems (HIS)

In 2004, Health Management Information System (HMIS) was established in MoH. It consisted of a series of registers, tallies, and aggregation and reporting formats to be used at villages and facilities to collect data on demographics, promotion, preventive, and curative services. Implementation of the facility-based HMIS was mandated by decree in 2004; implementation of the village-based system is optional apparently because of its cost.

The HMIS report attempted to organize to coincide with the six MoH workplans/ programs which begin with (1) hygiene and prevention (indicator related to mother and children health), (2) curative care (indicators related to hospital services and diseases pattern), and (3) organization and personnel (indicators related to medical personnel per population).

As normal procedure of the MoH, routine health data collection performed monthly from health centres and quarterly from districts to PHO. PHOs then send to central level for consolidation and processing. The data mainly consists of health service delivery, which is categorized by the disease at facility. It is then presented and consulted through formal health technical working group meeting as well as through informal email communication with data producers. Then data is selectively based on MDG targets and Mother and Child main indicators to analyse and present in the form of summary tables and graphs follow by narrative discussion.

In addition, PHO which is part of communicable disease receives weekly report from ground level to district and province by local epidemiologist. PHO then compiles data and shares with central Epidemiology Centre. The data collected from both event-based (in community) and indicator-based (in hospital) are purely on communicable disease.

Presently, government is in the process of establishing a national data base programme called Personnel Information Management System (PIMS). All ministries, including MOH, are actively involved in this process. In the near future, the PIMS will be the HRH database for all Lao civil servants. This is an online programme that ministries can access anytime.

Currently, WHO is supporting MoH to set up HIS for general health topics and so far, no consultation meeting is conducted with all technical units to standardize the reporting format that includes all disease-related topics.

¹³ National Medical Equipment Management Policy, MoH, 2003

4. Overview of the eye health system

Key Findings

Strengths

- The MoH is engaged and eye care is integrated into government policies.
- There is the existence of a number of health policies which supports eye care service and interventions (HRH, finance, incentive for human resource, etc.). As a result, eye care reflects in the health system.
- During the last five years, service coverage and quality of eye care services has increased.
- There are plans for training significant numbers of new eye care staff by 2015.

Weaknesses

- No public budget is allocated specifically to eye care.
- There is limited distribution of government eye facilities and staff, particularly in remote and poor areas.
- No private sector is available to provide service on health care, including eye care.
- There is a low Cataract Surgical Rate.
- There are weak monitoring systems for patient feedback, eye care activity or outcomes.

Eye Health Status

The 2002 report by the Lao National Committee for Handicapped Persons (NCHP) stated that the national estimation of people with disabilities was 362,420 persons or 6.8% of the population, with higher rates in rural areas. According to a survey by the Lao National Medical Rehabilitation Centre in 1996, 29% of disabilities were due to blindness or severe visual impairment. There has never been a national blindness prevalence survey in Lao PDR, however it is estimated at approximately 0.5% (approx. 30,100) based on a Rapid Assessment of Avoidable Blindness (RAAB) survey undertaken in 2013 by the National Ophthalmology Centre (Table 3 below). The main causes of blindness are cataract (65.3%), glaucoma (12.5%), corneal scarring (6.9%), surgical complication (6.9%), phthisis bulbi (4.2%) and posterior segment (4.2%) with cataract incidence estimated at 1 per 1000 population (approx. 6,200) new cases of cataract blindness per year¹⁴.

Since eye care is part of the general health system, a patient can receive eye care service in OPH or in ECWs of other hospital at central and provincial levels. Naturally, eye care functioning is very much linked to a number of institutions related to professional development, planning and budgeting, health promotion, and research. There is a need

¹⁴ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

for improvement of data collection, recording and information system management in eye care service throughout the country.

At sub-national level, no data on blindness prevalence is available. It is namely from provincial down to district and health centre level.

Table 3: 15

Principal cause of blindness in persons: VA<3/60 in better eye with available correction

	Male		Female		Total	
	n	%	n	%	n	%
Refractive error	0	0.0%	0	0.0%	0	0.0%
Cataract, untreated	12	57.1%	35	68.6%	47	65.3%
Aphakia, uncorrected	0	0.0%	0	0.0%	0	0.0%
Total curable	12	57.1%	35	68.6%	47	65.3%
Surgical complications	2	9.5%	3	5.9%	5	6.9%
Trachoma	0	0.0%	0	0.0%	0	0.0%
Phthisis	1	4.8%	2	3.9%	3	4.2%
Other corneal scar	2	9.5%	3	5.9%	5	6.9%
Onchocerciasis	0	0.0%	0	0.0%	0	0.0%
Total preventable	5	23.8%	8	15.7%	13	18.1%
Total avoidable	17	81.0%	43	84.3%	60	83.3%
Glaucoma	3	14.3%	6	11.8%	9	12.5%
Diabetic retinopathy	0	0.0%	0	0.0%	0	0.0%
Potentially preventable*	3	14.3%	6	11.8%	9	12.5%
Globe abnormality	0	0.0%	0	0.0%	0	0.0%
ARMD	0	0.0%	0	0.0%	0	0.0%
Other post. segment / CNS	1	4.8%	2	3.9%	3	4.2%
Total posterior segment	4	19.0%	8	15.7%	12	16.7%
	21	100.0%	51	100.0%	72	100.0%

In Lao PDR, cataract was found to be the major cause of blindness. The current capacity to perform cataract surgery is approximately 4,000 cases annually, which makes impossible to reduce the backlog of cataract blindness cases if compared to cataract incidence cases. Thus, there is an increasing backlog of unmet needs for sight restoring surgery.

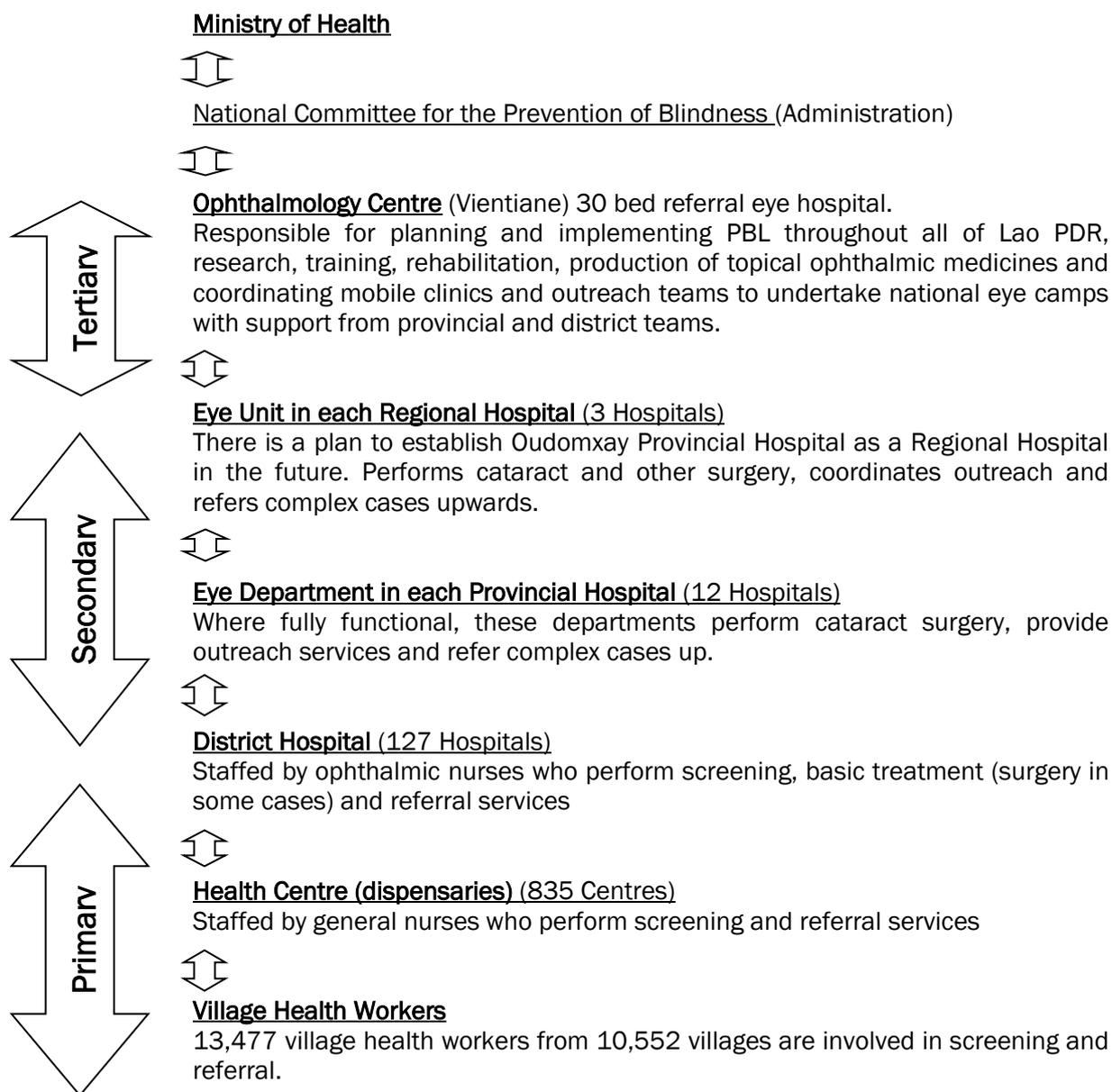
The major barriers to an increased number of operations is the lack of awareness of eye health care services, accessibility and affordability of surgery, the limited number of trained eye health personnel and government funds allocated to eye health. These obstacles are exacerbated by the poverty levels of rural patients, the high costs of providing eye health care and a general fear of cataract operations within the community.

¹⁵ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

Eye Health Structure

Recently, OPH produced a country report on the prevention of blindness in Laos¹⁶. The eye health structure in Lao PDR is drawn as below:

Figure 5: Eye Health Structure in Lao PDR



¹⁶ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

Eye Health System Governance

The National Ophthalmology Centre (OPH) is under administration of Department of Health Care (former name is “Department of Curative Medicine”) at the MoH.

The health system in Laos includes 4 Central hospitals (Vientiane capital city), 3 regional hospitals, 13 provincial hospitals, 127 district hospitals, 835 health centres, 8,704 villages, 13,477 Volunteer Village Health Workers (VVHWs), and 5,764 Village drug kits.

There is 1 tertiary and 10 secondary eye care facilities in LAO PDR.

Public sector services:

Eye care in Lao PDR is integrated into public health care (policy level) as a strategy of the Ministry of Health.

At tertiary level, OPH is responsible for planning blindness prevention, research, training and the local production of eye drops. The Centre has 20 beds for surgical and rehabilitation patients. It also coordinates mobile eye care clinics to remote areas of Lao PDR.

At secondary level, there are eye departments in 17 Provincial Hospitals, but only 10 could provide eye care services as secondary facilities. When they are fully functional, eye departments can treat common eye diseases and perform cataract surgery. These hospitals also assist the OPH with the coordination of mobile eye care clinics to remote areas of Lao PDR.

At primary level, there are approximately 127 district hospitals, 835 health centres as well as a village health worker (VHWs) network.

Faith-Based Organizations (FBOs) and NGOs services

Several FBOs and NGOs, which serve as counterparts of the OPH, are jointly implementing the eye care programme in line with WPRO framework. However, their support has limited coverage and the majority of people with cataract lives in remote areas with no access to subsidized eye care services. The details of the FBOs and NGOs working in eye health sector and their activities in Lao PDR are collected by OPH and presented in [Annex D](#).

Private Sector services:

Very few agencies from private sector are available at national level to provide services on eye care; however, there are officially no private ophthalmology services in Lao PDR. To some extent, however, people can seek some assistance from the Disabled People Association (DPA). The DPA considers not only people with eye problems but also other types of impairment (people with hearing problem and other physical impairment). NCHP advocates the OPH to share their need for collaboration to support their targets. The OPH then take the responsibility to report to decision-makers at Ministry level.

Overall, there are few social associations or private sector on eye care at provincial level.

Summary of eye care service delivery in Lao PDR

In Lao PDR, eye care is considered as one component of primary health care system. Eye care service is delivered for the majority of people living in urban area but limited service is available in rural remote areas. In this regard, eye care is presently integrated to other existing outreach health services.

OPH is the only organization that delivers health care service. There is also a number of eye care ward in central, regional, and provincial hospitals that provides services to people. Those eye care wards receive technical advice from OPH.

Although the eye care ward in provincial hospital serves people actively, there is no such service at district level.

Donor mapping and coordination

Coordination with donors is implemented through OPH. The bottom up coordination is practiced. ECW proposes to OPH then OPH can work with donors, and together they lobby decision makers at the Ministry level. ECW seeks advice from and explains their needs to OPH. The latter can then share the issues with donors.

Although there is no donor for eye care at provincial level, budget support from donors is channelled through OPH and part of the funds are used by provincial authorities.

Since OPH is assigned to coordinate and build relationships with other potential eye care partners to mobilise technical and financial support or exchange technical expertise, there is a need for OPH to conduct a donor mapping in Lao PDR in order to assess the current situation of donor coordination in eye care system in the country. It is because there is a growing number of donors that are interested to support the eye health care in Laos.

Generally, WHO takes a leading role to provide technical support on primary eye care and Prevention of Blindness since the 1980s. WHO works closely with the GoL on the development of action plans to identify priority areas of work. The action plan is centered on the expansion of coverage in the area of eye health through the provision of comprehensive eye care services integrated into the national health system and on the alignment of the action plan on the action plan 2009-2013.

1). Governance of the Eye Health System

Key Findings

Strengths

- OPH is responsible for planning blindness prevention, research, training and the local production of eye drops.
- The National Treatment Guideline includes common eye diseases for health care provider at district level. The primary health care guideline for health centre staff also advices on treatment of simple eye care, such as conjunctivitis and other simple eye traumatic.

Weaknesses

- No consultation meeting between HIS of MoH and all technical units to standardize formats of reporting that include all disease-related topics.
- DPOs and other CSOs have limited opportunity to be involved in the planning of eye health services.
- Limited feedback or complaint mechanisms to enable service users to express their thoughts on the current eye health system.

MoH and the National Ophthalmology Centre (OPH) regularly solicit input from the public and concerned stakeholders (including representatives from disabled people's organizations) about eye care priorities, services. Those comments are put in plan of the OPH, but mainly focus on clinical case management in health facilities with less sensitivity on public health prevention and control. This is due to poor capacity and opportunity of the OPH to advocate for eye health and primary eye care issues. Consequently, issues on eye care data are not used or analysed to provide feedback to the government on health sector goals, planning, budgeting, and expenditure.

Organisational structures and their impact on governance

At National level, OPH is responsible for planning blindness prevention, research, training and local production of eye drops.

At provincial level, the Provincial Health Office (PHO) takes a role of leader to decide, plan, implement, mobilize and allocate funds to support priority projects. The eye care ward in hospital appears to be an important technical unit to provide services for people in the province.

While no surgery is undertaken at district level, some district hospitals are staffed by ophthalmic nurses who are trained on how to identify and treat minor eye problems and refer patients to higher levels for treatment of complex conditions. Table 4 below shows a summary of all eye health facilities in Lao PDR.

Table 4: Overview of Facilities and Human Resource distribution¹⁷

No.	Province/ Total Provinces in Laos	District/ Total Districts in Laos	# PEC workers trained
1	Phongsaly	2	156
2	LuangNamtha	2	140
3	Oudomxay	4	242
4	Bokeo	2	134
5	LuangPrabang	1	22
6	XiengKhuang	1	15
7	Huaphan	1	15
8	Khammuan	4	214
9	Xekong	2	82
10	Salavan	1	115
11	Champasack	2	100
12	Attapeua	1	58
Total	12/17	23 / 127	1,293

Disabled People's Organisations in Lao PDR: role and capacity

There is National Committee for Handicapped Persons (NCHP) and people have access to the Disabled People Association (DPA) to seek assistance. The DPA considers not only people with eye problems but also those with any other type of impairment (people with hearing problem and any other physical impairment). The NCHP aims mainly to detect the case and support people with disabilities to respect their right for proper treatment.

To date, there is no eye care-related association that focuses on the technical aspect in this country. Specific disease associations are mostly available in Vientiane. The Eye Care Ward (ECW) receives their support sometimes, but coordinates through OPH. The country now is in the initiating stage of involving key stakeholders and donors to support and promote eye health care.

Public information and feedback about eye care services

MoH, with technical support from WHO and other international partners, set up a national surveillance system for communicable diseases to detect diseases that are the top causes for morbidity and mortality of Lao people. The event-based action provides useful information to predict the further development for the health. However, there is no integration with other non-communicable diseases (including eye health) in the existing system. So, data related to eye care is mainly from OPH and other eye care units based on hospitals' records. Risk assessment could be done through surveillance data and help plan for rapid response to any possible health event. Data from health care service facilities are mainly used to plan for hospital-based service improvement (minority for public health). Although, there is an annual meeting to develop the eye care plan, it is

¹⁷ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

again focused on accessibility of cataract surgery alone with less focus on other strategies towards reducing avoidable blindness and vision impairment.

Eye care data is mostly coming from health facility in sub-national level including set of information of health service delivery. However, eye care data is not highlighted and not always used for planning with focus on the eye care improvement.

Feedback on eye care through public information system is rarely observed.

2). Eye Health Financing

Key Findings

Strengths

- The National Ophthalmology Centre (OPH) receives government funding to support the procurement of eye care medicine.
- The eye care services are covered by the health insurance scheme.
- Several mobile eye clinics are partially funded by the Ministry of Health, which covers staff salaries and infrastructure.
- Additional financial support is gained from various non-governmental organizations in Lao PDR.

Weaknesses

- MOH budget for eye care is inadequate, and is mainly allocated as revolving funds for drug procurement in support to eye care in hospital setting.
- Donor spending for eye health is unclear due to donor focus is on service delivery level while there is weak coordination at department level.
- There are no budgets for eye care at district level, which limits integration of eye care services.

1. Government

A two-way communication is done to set up the budget. Provincial Health Department proposes the budget for health improvement in the area then submits it to the Department of Finance at MoH. The central level will inform the respective provinces for possible budget allocation in order to ensure that sub-national level is clear on available/shortage of budget.

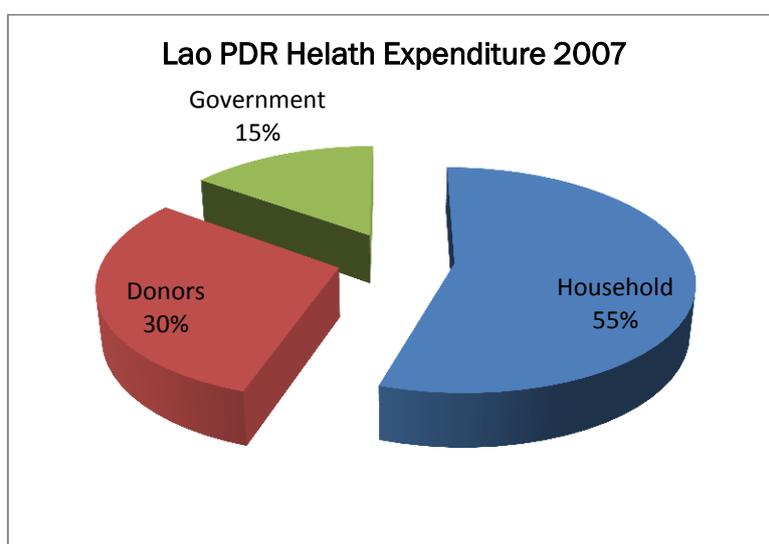
There is a very limited budget for outpatient (OP) and inpatient (IP) eye care from government, but more on outreach activity. Budget in HC depends on drug revolving funds. No additional budget is available to improve health service delivery at PHC. If the client is identified as poor, HC can provide free service for them and then receive a subsidy from Health Equity fund. Eye care in HC is rare as it is thought in Laos to require an ophthalmic nurse. That is why HC have no budget request on eye care.

2. Public Spending

Government spending on eye health is lower than 1 % of total health expenditure for staffing, administrative and as capital fund for all related eye-care medicine. OPH mostly receives external support from international agencies, including WHO.

There is no specific budget line for eye care but is allocated as a revolving fund for drug procurement to support eye care in hospitals. Due to limitation of budget, the budget is spent in its totality every year.

In 2007, for example, total health expenditure was about \$138 million or US\$24 per capita with about 55% coming from households, 30% from donors, and 15% from government hospitals, which are highly dependent on user fees. Health workforce – salaries account for about for about 75% of domestic health expenditure.¹⁸



Recently, although the government endorsed the rule 9% for health development, current domestic government spending for health only accounts for 3% of total government budget from domestic source. Part of this spending, about 0.4% of the total health budget, is for eye care. Compared to needs, government spending is inadequate for eye health. Further allocation to eye care is not made by the Finance Department anymore, but is under the responsibility of the concerned department such as Health Care Department at MOH. Overall, the budget from government or external support is mainly channel through MOH as a single principle management, but not involving other line-ministries.

At provincial level, the Governor provides active support to health including eye care issue. Since 2012, PHO can get almost 100% financial support as requested from provincial governor office. It means that it depends on the needs of PHO who also compile the needs from each technical unit, including eye care. Therefore, this process requires high sensitivity of the PHO to bring the issue up to technical and service delivery

¹⁸ World Health Organisation Regional Office for the Western Pacific 2005-2010

unit so that they could plan and propose to Governor as PHO's plan. For example, in Louangprabang province, PHO receives almost 100% financial supports from governor upon their request (including eye health care, especially for outreach activities). However, PHO could not calculate as percentage because this is ad-hoc request, which is not included in its work plan yet. Good advocacy of the MoH may help them to get more support from government.

The eye care service, however, is already part of health service package that is covered by health insurance scheme (except purchasing for contact lenses).

3. Donor Spending

While the government is experiencing a shortage of budget, the health development very much relies on Overseas Development Assistance (ODA). Donor spending for eye health, however, is not clear since the budget is not coordinated at department level. It is rather put in service delivery level. At the same time, to measure the percentage of ODA for health development remains a challenge. This is due to the absence of a sector wide working group. Each donor has its own financial system that is not shared with MOH.

At national level, MoH promotes 'single source of budget' by coordinating different funding sources among central and local government and with donors through effective planning process and align with the health funding for health development.

At sub-national level, OPH prepares an action plan based on the needs of the Eye Care Ward (ECW) of each province then presents it to donor. PHO understood that OPH then allocated the budget to ECW through PHO. However, there is no clear picture on the proportion of the budget allocated to Provincial Health office from OPH.

4. Health insurance

The Health Financing Strategy 2011-2015 developed by MOH is to look at different options for sustainable funding of health care, including the introduction of health insurance.

There are 4 existing schemes of health insurance namely State Authority for Social Security (SASS), Social Security Organization (SSO), Community Based Health Insurance (CBHI), and Equity Fund for the Poor. Poor people are identified through interviews and selected if they meet criteria accompanied with a supportive letter from village head. SSO is compulsory for all factory workers. Un-employed people are not excluded for registration to any health insurance scheme, except equity fund for poor.

Presently, out of pocket payment represents almost 80% of total health expenditure. In the Health Sector Reform Strategy mentioned future step to increase to at least 50% of Lao population are covered by the payment schemes, in which 70% of poor are covered.

For insured-patient, provincial hospitals are covered by health insurance for treatment of any eye care except cataract surgery with contact lenses purchasing. The patient has to show their insurance card when registration in the hospital to inform receptionist, if not, patient has to pay 100%. Not all district hospitals are contracted for health insurance

scheme. Only hospitals with an ECW with an ophthalmic nurse or basic eye doctor are included. If not, patients are advised to travel to urban to visit ECW in provincial hospital.

5. User fees

With supervision of MoH, the OPH follows decree No. 52/PMO issued by the Prime Minister Office as guide to determine user fees. The eye care service is under health insurance scheme, except cataract surgery and contact lenses

At district level, all fees collected from ECW service are 100% for the hospital. That money can be used for medicine and consumables, but not for eye care equipment. If needed, the request for those equipment/materials shall be sent directly to ECW of the provincial hospital who then requests further to OPH for support. Presently, there is no private sector to run eye health service in Lao PDR.

At Health Centre level, clients must pay for all kind of eye care service because HC is not contracted by the insurance scheme. The fee is usually unaffordable for rural people to bear transportation costs and the time lost for other productive activities.

3). Eye Health Service Delivery

Key Findings

Strengths

- MoH has authorized OPH to manage eye care services in the country.
- Several mobile eye clinics, coordinated by the OPH and provincial hospitals, have offered some relief to rural populations along the Mekong River and to isolated highland communities.
- There is a comprehensive network of PHC service delivery covering Lao PDR. Some Health Care workers received some training in recognising and treating basic eye conditions.
- The eye care services (conjunctivitis and trachoma) are included in the treatment guideline to support HC staff as reference in treatment practice.

Weaknesses

- There is limited access to eye health services. This affects the provinces, districts and villages, particularly remote and poorest areas.
- Although the network of eye health care service covers the majority of provinces with trained primary eye care (PEC) workers, there is a poor management of patients in the hospitals
- Poor referral system of eye care-related patients to facilities that could handle their case.

Availability, access to and utilisation of eye care services

Service on eye care is available in OPH or in ECWs at provincial level. The facilities open 24 hours/7 days. At district level, only 1-3 health staff works in HC. They involve all horizontal and vertical programmes of health. All vertical programmes present are mainly outreach activities which requires staff to stay far away from health posts. So far, no eye care services have been integrated except for conjunctivitis.

There are 30 beds in OPH and about 5-10 beds in each 5 provincial hospitals (Oudomxay, Louangprabang, Xiengkhuang, Savannakhet, and Champasak). In total about 80 beds of ECW is about 1.5% of total beds in all health facilities. Bed Occupancy rate is about 60%.

Where there are eye care facilities in few health facilities, they tend to have good quality infrastructure. However, there is inequitable distribution and access to eye health services in Lao PDR, particularly in remote and hard to reach areas in all provinces. Where there is no eye clinic, the local population does not have access to any eye health service within reachable area, unless they live near the above-mentioned facilities in OPH and five province hospitals. The majority of populations, especially poor and ethnic people, are far from those facilities. They still have to travel long distance and bare all costs to access eye care services.

Outreach

Eye camps are conducted in rural communities to improve access to services for the poor and vulnerable. These outreach services are conducted as collaborative exercises between the OPH and provincial health departments and are partially funded by the MoH. The budget covers staff salaries and infrastructure. Additional financial support is received from NGOs.

Cataract Surgeries

The major cause of blindness in Lao PDR is cataract, which represents a massive public health and socioeconomic problem in developing countries. Although cataract is by far the most common cause of blindness and visual impairment among people all over the world, including Laos, delivery of cataract surgery is often difficult because of shortage of manpower. Low utilization of existing services is due to lack of public awareness of such facility and service. This situation has led to the accumulation of un-operated cases of cataract in Lao P.D.R.

Although there is only one vertical programme on cataract surgery that is currently functioning, the promotion for cataract surgery is not easy either. Surgical refusal rate usually was found to be around 30%. HCs are involved in the detection of cataract cases that are then reported to the district and ECW.

Table 5: Hospital-based and outreach for Cataract surgery between 2001 and 2012¹⁹

Years	Population	Cataract Surgeries	CSR
2001	5,296.200	2,944	556
2002	5,374.400	3,635	676
2003	5,452.600	4,598	843
2004	5,530.800	4,232	765
2005	5,622.000	3,158	562
2006	5,706.000	4,831	847
2007	5,814.000	5,563	956
2008	5,930.000	5,458	920
2009	6,000.000	4,008	670
2010	6,120.000	3,955	646
2011	6,242.000	3,659	586
2012	6,256.000	4,638	741
TOTAL		50,679	

ECWs at provincial level have different target of cataract surgery. Targeted number for surgery is decided depending on the capacity of the ECW.

Due to the shortage of manpower, skills and equipment, Health Centres do not perform any surgery related to eye care.

Refraction and Low Vision Services

Refractive error and low vision are the major eye problems. Presbyopia is almost universal in people aged over 40. A recent survey conducted by OPH on refractive error among school children, ages 6-10 years old, of primary school in Vientiane province, found that around 0.3 % of this group children are with refractive error. OPH recommended that pre-school and school children in Lao PDR must not be excluded from targets for such services.

However, there are very limited low vision services and very few refractionists (total of 11) in the country at both tertiary and secondary levels. The National Ophthalmology Centre based in Vientiane Capital is able to provide refraction services campaign only to some offices and factories, both private and governmental sectors, in Vientiane capital.

School screening

In 2005, the Ministry of Education and the Ministry of Health signed an agreement on National School Health Policy and Strategic Implementation. Visual screening among school children is one of the indicators that OPH assigned to primary school teachers to

¹⁹ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

conduct visual screening in children every year at the beginning of school year and now is expanded to lower secondary school. OPH also piloted visual screening in private pre-primary school children in Vientiane capital. The result shows that only a few out of 104 children have eye problems. This would mean that this kind of activity is not necessary in such area, thus, should be redirected to the other areas.

OPH introduced E-chart for schoolteachers to conduct routine screening for children to detect impairment vision. This also reflects in National School Health Policy of the Ministry of Education and Sport (2010) with support by the WHO. The OPH works with very few numbers of school in about five provinces (Oudomxay, Louangprabang, Xiengkhuang, Savannakhet, and Champasak) to target screening school children. On a small scale, OPH conducted training teachers for eye screening. The trained teachers then screen school children, i.e., sight problem, and send report to OPH. Since E-chart material is not yet provided for all schools in the country, the action therefore is taken in schools where materials are provided. Such practice could be scaled-up in collaboration between Health and Education sectors at national and provincial levels.

With visual screening conducted in those primary schools, few cases of students with cataract were found in these areas. Cataract extraction was also done by OPH. Besides, refractive error is also common amongst school children. For children who cannot see well, teachers will arrange them to sit in front and refer their parents to an eye care professional. Although visual screening is not covered in all schools, it is very helpful to detect cases at an early stage and to further seek for prompt treatment to prevent amblyopia.

For trachoma control, OPH coordinates with the school health program, especially on personal hygiene (facial cleanness and hand washing) and collective hygiene (water supply and latrine in school and community). Under the School Health Taskforce, communicable diseases books, including conjunctivitis and trachoma management, have been developed and printed. The books describe the diseases and how to prevent contamination of those diseases.

Eye care promotion is initiated in schools through its health programmes. However, more advocacy to leaders in education sector, at each level, is still needed. Furthermore, there is are advocacy tools and teaching-learning materials available to support building awareness for both teachers and school children.

Other eye programmes

While there are currently no permanent eye care services outside the district hospitals, several mobile eye clinics, coordinated by the OPH and provincial hospitals, have offered some relief to rural populations along the Mekong River and to isolated highland communities. The mobile clinics are partially funded by the Ministry of Health, which covers staff salaries and infrastructure. Additional financial support is gained from various non-governmental organizations in Lao PDR.

Vitamin A programmes

Vitamin A supplementary programme consists of periodic distribution of Vitamin A tablets to breast feeding mother and children under 5 year-old. There is also an activity to provide nutrition education to pregnant women. The programmes are under Expanded

Programme of Immunization (EPI) + Vitamin A distribution program. The coverage during 2010 and 2011 shows as below²⁰:

	2010	2011
Children < 1 year (6-11 months)	66 %	80%
Children 1-6 years (12-59 months)	83 %	90%

Integration of eye care with other health services

In general, there is insufficient focus on prevention of poor eye health at community level such as increasing population awareness of eye health and available services. HC mainly performs outreach activities, i.e. vaccination, de-worming, family planning, nutrition, water supply and sanitation etc. but there is no integration of eye care in any outreach activity. For HCs to perform that way, they need policy, guidelines and agreement to support their work in such possible integration.

Primary health care delivery service exists in health facilities in peripheral area. Eye care (conjunctivitis and trachoma) is included in the treatment guideline for HC staff.

Quality and Quality Assurance

1. National standards

There is a policy on licensing and technical monitoring for health care practitioners including eye care providers. This policy is in the process of finalization and it is expected to be implemented in 2013. For instance, a newly graduated student will have a few years of working probation in areas designated by the MoH. A licence will be offered for only medical students who have successfully completed the academic and practicum programme at community level. The awarded licence is valid only for two years. All health practitioners shall have to undergo an examination to renew their license. As such, a licence is granted based on the qualifications of the license-holder.

A few policies target improvement of the quality of service (including eye care). Firstly, MoH introduced the policy on Exit Exam for health professionals to ensure that the graduates are equipped with adequate skills and competencies to practice. In addition, licensing of all health practitioners is being implemented to keep them updated of their professional knowledge.

There are no quality standards yet in national policies specifically for promoting quality of eye care and there is no clinical supervision for eye care implementation either.

²⁰ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

2. Outcomes and monitoring

After the 2007 Rapid assessment²¹, blindness prevalence was estimated to about 0.5%. Neither surveillance system nor additional study was conducted thereafter resulting in no availability of updated information for OPH. There is no prevalence identified at provincial and further down levels.

4). Human Resource for Eye Health

Key Findings

Strengths

- National Policy on Human Resources, which is a priority plan in the Health Sector Reform (2013-2015), was endorsed in 2011. The policy covered eye care personnel, including pre- and in-service professional improvement for service providers.
- Eye care human resource improved over the years. The number of residents graduated from a residency training program has increased, as well as the number of ophthalmic nurses trained.
- Allocation of those trained staff in provinces and in some district health facilities.

Weaknesses

- Significant gaps in number of eye care staff, and inequitable distribution compared to population distribution, particularly remote and poorest areas.
- Manpower in eye care is deficient at primary level and lack of training for in-service at this level.
- Monitoring and evaluation remains poor for those trained eye care staff to ensure of technical competency.

Human Resource for Eye Health (HReH): numbers and distribution

There are only 20 Ophthalmologists in the whole country (five are in OPH and at least one ophthalmologist is in provincial hospital). About 148 ophthalmic nurses were trained and posted in district hospital and health centre. Due to high turnover of staff, it seems few eye care-related services are available in the district and peripheral health facilities. Currently, there are two individuals in Eye Care Residency programme, and because of limited funds, OPH can only accept about three residency students each year. HRH plan of MOH is circulated and OPH needs to lobby the Department of Personal and Education and science to improve pre-and in-service training to ensure of eye care staff in next five years.

²¹ Source: Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

The below table shows the number of eye healthcare providers by cadre who work in eye care. With a definite deficiency of ophthalmologists in provincial hospitals, PHOs realize that the eye care Residency course needs to increase the number of students.

Table 6: Eye care manpower in Laos (2013)²²

Profession	Number
Ophthalmologists	20
Basic Eye Doctors (BEDs)	9
Ophthalmic nurses	148
Refractionists	11
Primary Eye Care (PEC) workers	1,293

There are gaps in both numbers and distribution of eye care staff. Although there is not enough staff to cover all the districts, the distribution of HReH is also inequitable between provinces. It is particularly scarce if compared to the population distribution. Factors affecting uneven distribution of eye care manpower in Laos could be high turnover; lack of necessary equipment to support eye care services; and poor monitoring and evaluation of trained eye care staff to ensure their technical competency.

At provincial level, there is no adequate Ophthalmologists working in provincial hospital. There are only 20 Ophthalmologists and not all of them are posted in 17 provinces to serve entire six millions citizens. Although PHO permits to recruit more staff, it is ECWs to propose to recruit new ophthalmologist and ophthalmic nurse.

At district level, ophthalmic nurses are posted in but not all HCs. While working in HC, their terms of reference do not only cover eye care but also to support all health vertical programmes implemented in the province. Consequently, it is very common that they are unable to provide eye care service on the ground.

Recently completed report by Ophthalmology Centre LAO PDR shows the distribution of primary eye care in the country as shown in the table below:

Table 6: Coverage of PEC both at District and Community level in Laos 2013²³

Number of District	Number of Oph. Nures in district hospitals	Coverage
143	95	66.43 %

Number of village	Number of PEC Workers	Coverage
8.704	910	10.45 %

²² Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

²³ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

Training of eye care staff

Several training programs are conducted at the OPH in Vientiane Capital and that include specialists in areas such as retina, glaucoma, cornea and childhood blindness. The training can be done for a high number of staff but not for all.. It is still insufficient to comply with the needs because staffs who are responsible for each subspecialty clinic mostly had just short training rather than complete fellowship training. The paediatric ophthalmology clinic is very basic and equipment such as worth four dots, stereopsis test remains a challenge.

Summary of current training related to eye health care are listed below²⁴:

1. Residency Training Course (3 years)

There are 10 residents in ophthalmology training at the Ophthalmology Centre in Vientiane, following one-year training at Khonkean University in Thailand.

Every year two residents will graduate from the three years residency training program.

As the Vision 2020 target for Lao PDR is to have at least four ophthalmologists per million people, therefore, based on the current population, at least 22 ophthalmologists will be needed.

Lao PDR's national plan sets its own target of 30 ophthalmologists and nine BEDs by the year 2020.

2. Basic Eye Doctor Training Course (1 year)

A short training program exists in Lao PDR specifically for basic eye examination and minor surgeries such as Pterigium, lid surgery etc. There are two BED presently training at the Ophthalmology Centre.

3. Ophthalmic Nurse Training Course

It is estimated that at least 15 ophthalmic nurses will be trained for a period of four months in order to provide enough ophthalmic nurses in ratio of one per district in the whole country. Recently, there is an opening of the ophthalmic nurse training course at Ophthalmology Centre and Oudomxay province. OPH also conducted refreshing courses for Ophthalmic nurses both at provincial and district levels, which took place into three parts (Northern, Middle and Southern) of the country.

4. Refractionists Training Course

Training to become a Refractionist is delivered in Thailand. Refreshing course for Refractionists at the Ophthalmology Centre are conducted by a teacher and an adviser from Cambodia.

²⁴ Unpublished report: Prevention of Blindness in Laos. Rapid Assessment of Avoidable Blindness (RAAB) survey 2013. OPHTHALMOLOGY CENTER LAO PDR.

5. Primary Eye Care for VHW

At present time, no PEC training is delivered in any province of Lao PDR. However, PEC training has been conducted in some districts of the 12 provinces that are supported by some NGOs such as Sight First, Fred Hollows Foundation, Eye Care Foundation, and Christiane Blind Mission (CBM).

Training of trainer (ToT) courses at both district and health centre levels are conducted for three days. PEC training is conducted for two days with the participation of ophthalmologists, BEDs, ophthalmic nurses, health centre staff and village health workers (VHWs). The only PEC teaching material available is a single poster.

PEC workers were trained in:

- Visual acuity testing.
- Diagnosis and/or treatment of conjunctivitis, trachoma, superficial foreign bodies and ophthalmic neonatorum.
- Treatment and referral of eye injuries and red eye conditions.
- Diagnosis and referral of refractive error, pterygium and cataract.

Trends in eye care workers over the past 5 years

Overall, Lao PDR's national plan sets its own target of 35 ophthalmologists and nine BEDs by the year 2020. By the numbers above, it seems Laos has put in effort to achieve the goal in terms of BEDs development. In reality, there is a need to distribute those trained BEDs to work in peripheral areas rather than concentrate in the urban communities.

With regards to primary eye care service, there has been very limited training on primary eye care for Village Health Workers (VHWs), which severely restricts the flow of patients from village to provincial level for treatment.

Also, Government lacks financial resources that contributes to low wages for government's health workers (including eye care providers), and places significant and on-going constraints both on the ability to support the workforce and the capacity to develop and implement long-term workforce development initiatives.

At provincial level, PHO asks the help of OPH to communicate with concerned partners to produce more BED, that is, at least two BEDs in provincial hospital and one in district hospital. PHO can request to have additional quota of staff, but no plan yet at the moment since there is enough training school capacity.

At district level, the trend has very little change, which means there is always few staff available in HC.

Specific findings for different cadres of eye care staff in Lao PDR

Eye care providers are well recognized by authority and public. However, the number of ophthalmologists and ophthalmic nurses is very much dependent on the need identified by individual facilities.

Ophthalmologists: It is reported that graduated ophthalmologists were dispatched to the health facility that need them, however, ophthalmic nurses who can be turned away to get new jobs in certain health facilities.

Cataract Surgeons: At provincial level, only one cataract surgeon in ECW is well known by the public and no one can replace him whenever he is absent from hospital for outreach activity.

Ophthalmic Nurses: Although the optometry training course had been conducted for nurses and ophthalmologists, the trained staffs are not functioning in this area since there is no availability of related equipment in their peripheral health facility. Refractive services are not in the terms of reference for trained ophthalmologists or ophthalmic nurses. This leads to little optometry action practiced, whilst there is a need in the local area. In other areas, PHO recognizes those people are listed in HRH as professional cadres, unfortunately the position is always vacant.

National Policies and Strategic Workforce Planning

Since HRH is a priority issue of Government plan, the MoH then includes HRH as a priority plan in Health Sector Reform Plan (2013-2015). The plan mentioned for both pre-and in-service professional improvement for service provider including eye care provider.

At sub-national level, eye care is prioritised in provincial HRH plan. The proposal was made by PHO and sent to MoH but they never received a response. PHOs assume that MoH have no such human resource for PHO due to lack of production. However, PHO/ECW itself has no capacity to a conduct situation analysis and to develop a proper plan. They share insight on case management rather than public health aspect.

At lower lever, district health offices and health centres have never seen any specific HRH staff, especially for eye care.

Curriculum Development and Relationships with Training Institutions

For eye care professionals, there is a 3-year residency programme that targets professional development of ophthalmologists. There are also four months of additional training for graduated nurses so that they can practice as ophthalmic nurse who can be posted in eye care ward of health facility in sub-national level. Recently discussion had been made to the Dean of Faculty of Nursing Science, University of Health Science to establish a 2-year specific nursing course to produce ophthalmic nurses. It will however

take some time to prepare the curriculum and it is estimated to launch the course by the end of 2014.

The Medical Science Faculty produces general medical practitioners, who then can spend a few more years to become specialist. However, neither Medicine and Science Faculty of University of Laos nor the Department of Personnel (DoP) of MoH coordinates well with OPH to support the need of eye care practitioners.

The residency programme can only train two Ophthalmologists per course. It depends on the availability of the budget, which is mainly supported by external sources. If government budget allowed, it may help to produce an increased number of ophthalmologist per year. It is needed to advocate the decision makers on the change.

There are also other options to speed up ophthalmologist training by improving the existing curriculum and increasing its credit to two to be more dependent upon training modules (1 credit equivalent to 16 teaching hours). The Department of Education and Science, MoH, must discuss with OPH to identify the program needs. This could be part of the policy to link to other ASEAN's Universities in 2015.

The other important partner for successful production of eye care providers is the Department of Health Care (DHC). The DHC issues health service package in each facility. As the designed service package is not well disseminated to the university, existing curriculum to produce health care provider cannot be improved based on this health service package.

Although the current 7-year curriculum of medical education at the university covers communicable diseases and mother and child health, no attention is paid to eye common disease or care. Poor coordination between OPH and university leads to significant gaps in working on eye care by medicine students. Furthermore, the curriculum has not been updated.

There are 3 medical institutions at provincial level. Very little eye care appears in the curriculum as well as primary health care. Anatomy on eye is observed, but the topic of eye disease treatment is not covered. As a result, it is difficult to design credit for practicum course in ECW. As Medicine and Science Faculty plans to renovate all of its current curriculum and update to be in line with ASEAN university's curriculum, it may open a chance for OPH and other related sectors involved to improve the curriculum so that they can receive graduated medical student with assigned knowledge and skills on eye health and care.

By the year 2020, the Nursing Faculty plans to conduct almost a two-year primary eye care course for ophthalmic nurse. However, if there is a need by technical unit and DoP, the Nursing Faculty can support to compose the curriculum and the course can be started in the beginning of 2014.

Continuing Professional Development (refresher training)

There is no mechanism established to monitor implementation of the decree and report on its impact and outcomes of graduated students and trained eye care providers.

A response from one PHO visited states that: “When central (OPH) sent us the notification on an opportunity for upgrading professional knowledge for nurse or ophthalmologist, we will nominate our health staff to take the course. This is top-down approach for capacity building”.

Reporting, Monitoring and Supervision

There is no data available at national level regarding rural:urban ratio for eye care admissions/graduates. At provincial level, however, it seems number of available ophthalmic nurses and eye doctors are mainly posted in urban health facility. PHOs could not further dispatch those eye doctors to rural areas to serve the rural’s poor people because there is no related eye care equipment available.

Partnership in HR Policies, Frameworks and Strategic Plans

The health vision by the year 2020 is developed with the involvement of all technical and service delivery units. Each unit then develops the sub-policy/plan to implement the 2020 policy. The OPH has not yet directly lobbied the decision makers to get political and financial commitment, but it has already submitted its developed plan to the MOH.

5). Medicine, Product and Equipment for Eye Health

Key Findings

Strengths

- Eye care medicine is included in the policy of essential medicine.
- Eye care medicine is available in the province, which is in line with original approved list of Food and Drug Department (FDD).

Weaknesses

- There is a lack of necessary equipment to support eye care.
- With limited funds from the FDD, monitoring is not common for eye care-related medicines.

Expenditure on eye care medicines and equipment

Expenditure on eye care medicines and equipment is different between OPH and ECW in provincial hospitals. OPH received capital funds from the government to manage drug procurement then OPH can manage both revenue and expenditure. The OPH procure the related-eye care medicine and consumables by themselves based on actual needs. Eye care ward in provincial hospital, on the other hand, can propose their need to hospital director, who then decides to have single procurement for all wards of the hospital.

In addition, at provincial level, PHO approves funds to procure eye care medicine and consumables to be used in hospitals. It is estimated to be about 5% of the total expenditure.

Eye Care Drugs

In Lao PDR, eye care medicine is included in the policy of essential medicine. Eye care medicines are also included in essential drug list at provincial level. The list is slightly different from original list that has been approved by the FDD, as it is modified to fit the local needs, but there is no change in eye care medicines.

Pharmaceutical policies

The National Essential Drug List was nationally revised in 2012. Eye care medicine available in province is similar to the original approved list of FDD, but excludes contact lenses. PHO then follows treatment guideline from central OPH/MoH for treatment including eye care. OPH works independently in drug procurement and ECW in a hospital can procure the medicine through their hospital procurement plan.

The entire imported drugs will be registered in the Food and Drug Department (FDD). Quality and post market monitoring is also conducted by the FDD. Due to the limitation of funds, the FDD can only monitor some medicine which has high risk of resistance, such as the malaria drug and other counterfeit drugs. Monitoring is not common for eye care-related medicines.

Furthermore, there is varying of coloured-contact lenses appearing in the market that is not in the monitoring list of FDD. The lenses are found easily in the market by teenagers amongst whom these lenses are very popular. It is common to find cases of eye infection caused by this kind of contact lenses.

At provincial level, PHO has no related system to collect any pharmaceutical product, but it is a part of central level to conduct the activity if it is recognized for target collection.

Appropriate use

The National Treatment Guideline, which includes common eye diseases, is developed for health care providers at district level. There is also a primary health care guideline for health centre staff, which provides advices on treatment of simple eye care such as conjunctivitis and other simple eye traumatic. It is noted that PHOs follow treatment guidelines from central OPH/MoH for treatment including eye care.

In addition, the treatment guideline is also used as a training tool for health care staff in district and health centre level by master trainer team from OPH.

6). Health Information System for Eye Health

Key Findings

Strengths

- The Health Management Information System (HMIS) was established in MoH and mandated by Decree.
- The other functioning surveillance system of PHO is part of the government which is specifically for communicable diseases.

Weaknesses

- Report on eye care is not compulsory in overall health sector.
- National Ophthalmology Centre (OPH) has no standard template for reporting on eye care for their network in sub-national level.
- Health information system has not yet been developed adequately to provide quality data for informed policy development.

Information Products

Although Health Management Information System (HMIS) was established in MoH in 2004, it is so unfortunate that eye care related-data is not a priority category. As a result, information on eyes is not in the national data package.

At provincial level, PHOs involve as part of the national report scheme through surveillance system, but the focus is on communicable disease only. Again, no eye disease is reported through this system either.

Data Management, Dissemination and Use

It is noted that the HMIS report is organized according to the six MoH work plans/programs, however, among the 68 report forms (both Out Patient Department and In Patient Departments), none of them mentioned eye diseases.

All district and provincial hospitals report to central statistic unit at MoH on eye care services performance. But eye care information is not in the National Health Statistic Report of MoH.

District report of eye care cases is collected from district hospital, but rarely from peripheral area, especially health centres. Once district level reports are received by the PHOs, the then province level reports further to central level. Report from province is followed by designed form, which excludes the eye care data. Data available in district hospitals are recorded in their logbook and used for their area only.

For private facilities, report on eye care is not compulsory; this information is always missing in the report.

HIS report

Since report on eye care is not compulsory, the issue of eye care is always missing in the report. Furthermore, OPH itself has no standard template for their network in sub-national level.

As usual practice, however, OPH and authorities at provincial and district levels have their own data. Therefore, each organization develops the plan based on this data. At provincial level, ECW plans for eye care service then submit it to PHO.

WHO is currently supporting MoH to set up HIS for general health topics. All technical units will be involved in consultation meeting to standardize the reporting format that include all disease topics, including eye related diseases.

5. Annexes

Annex A: List of documents consulted

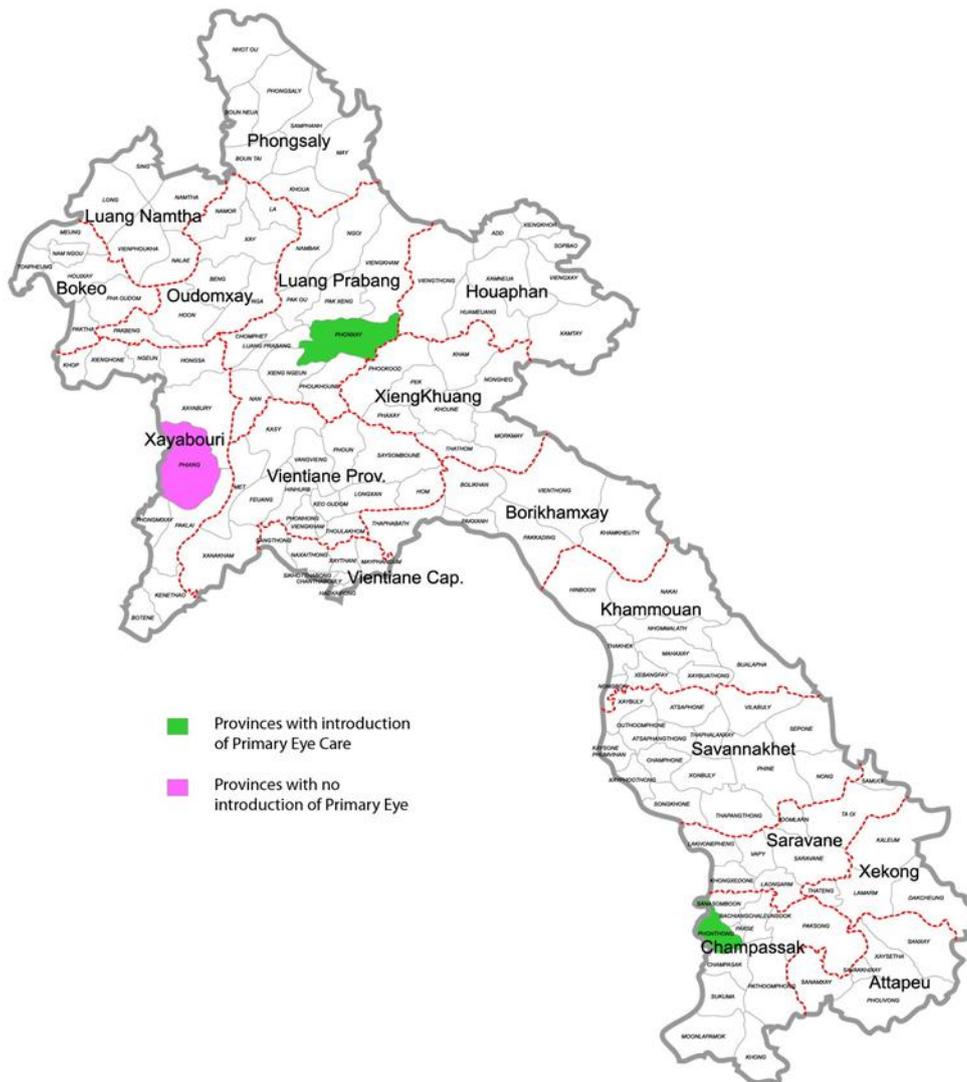
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Annex B: List of person met and interviewed

**Situation analysis on integration of primary eye care in other health care system
13-20 March 2013**

NO.	Name	Title	Organization
1	As/Prof. Bounkong Sihavong	Vice Minister	Ministry of Health
2	Dr. Khamphoua Southisombath	Director	National Ophtalmology Center, MOH
3	Dr. Somphone Phanmanixay	Vice Director	Department of Finance, MOH
4	Dr. Loun Manivong	Vice Director	Personnel Department, MOH
5	Dr. Khampasong Theppanya	Technical Officer	Data management, Department of Personnel, MOH
6	Prof. Dr. Sing Menolath	Director	Department of Education and Research, MoH
7	Dr. Sonchanh Saisida	Vice Director	Department of Education and Research, MoH
8	Dr. BounXou Keohavong	Chief	Drug Control Division, Food and Drug Department, MoH
9	Dr. Khamphet Manivong	Director	National Rehabilitation Centre, MoH
10	Dr. Chanhem Songnavong	Dean	Faculty of Nursing Science, University of Health Science
11	Dr. Phouthone Vangkornvilay	Dean	University of Health Science
12	Dr. Phoukham	Vice Director	Department of Planning and Cooperation
13	Dr. Amphone Phlammixay	Director	Provincial Health Office (PHO), Luangprabang Province
14	Dr. Viengsavanh Kaseumsouk	Head	Cabinet office, Coordinator for Primary Health Care, PHO, Luangprabang Province
15	Mr. Khamphouy	Head	Food and Drug Division, PHO Luangprabang Province
16	Dr. Sichanh Himphaphanh	Dean	Medical College, Luangprabang Province
17	Dr. Bounphien Mephongsay	Head	Eye Hospital, Luangprabang Province
18	Mr. Somchit	Head	District Health Office, Phonesay District, Luangprabang Province
19	Ms. La	Nurse	Health Center, Nam bor, Phonesay District, Luangprabang Province
20	Dr. Somchit	Head	Eye Care Division, Provincial Hospital
21			
22	Dr. Khampho	Director	Provincial Health Office, Champasack province
23	Dr. Bounthanh PHAIMANY	Head	Eye Care Division, Provincial Hospital
24	Dr. Siphanh Panyasavath	Dean	Nursing Faculty, Champasack Prov.
25	Mr. Bouala	Vice Head	Food and Drug, Provincial Health Office
26	Mr. Phemgvanh Mosqui	Vice Head	Hospital Management
27	Ms. Vida Viyu	Ophthalmic nurse	Haikok Health centre

Annex C: Map of Lao PDR: Province and District



Annex D: FBOs and NGOs Partnering In Eye Health Services

FBOs/NGOs	Activities
CBMI	<ul style="list-style-type: none"> • Training of residents and ophthalmic nurses. • Providing medicines, consumable, instruments & ophthalmic equipment. • Providing cataract surgical campaign and some • Special activities like World Sight Day etc. • Material support for training, brochure etc....
Lao Rehabilitation Foundation	Preschool Blind children
Asian Eye Care (Netherland)	<p>1. Southern provinces:</p> <ul style="list-style-type: none"> • Phaco Training, • Providing second-hand ophthalmic equipment. • IT Training for OPH staff in Vientiane Capital. <p>2. Xiengkhuang & Houaphan provinces:</p> <ul style="list-style-type: none"> • Providing ophthalmic equipment. • CEHWs training • Providing IOLs, consumable and free for cataract surgeries.
<ul style="list-style-type: none"> • Juntendo University, Japan • Sight for all (Australia) • Ho Chi Minh Eye Hospital Vietnam (VNIO) • Thailand 	Technical Cooperation
Sight for All. Australia	<ul style="list-style-type: none"> • Providing lecturers for residency training and ophthalmic equipment. • Survey on refractive error among school children. • Subspecialty training.
Sight First/LCIF Lions Club International Foundation	<ul style="list-style-type: none"> • Providing IOLs, medicines, consumable and free for cataract surgeries in outreach. • Mild level personnel training
Christian Blind Mission (CBM)	Comprehensive Eye Care in 4 southern provinces of Laos and strengthen training eye care personnel in National Ophthalmology Centre.
Fred Hollows Foundation (FHF)	<p>1st phase: Comprehensive Eye Care in 4 northern provinces (research, human resources development, infrastructure development: construction eye unit and equipment, mobile eye team, information system.</p> <p>2nd phase: extend comprehensive eye care in other 10 provinces in 2014.</p>
IAPB (WHO)	<ul style="list-style-type: none"> • PBL strategy of master plan • PEC PHC assessment
End Asia	Survey trachoma 2013
MOFA of Australia	Comprehensive eye care development 2013