



THE FINAL EVALUATION REPORT

Vietnam Comprehensive Eye Care Development Project

(Seeing Is Believing Phase V project - SIBV)

28 November 2016



Client: **FRED HOLLOWS FOUNDATION
VIETNAM**

Project Title: **Final Evaluation: Vietnam Comprehensive
Eye Care Development Project
(Seeing Is Believing Phase V project - SIBV)**

Project Duration: 01 January 2013 to 31 December 2016

Location/s: Dak Nong, Lam Dong, Tien Giang and Vinh Long Provinces,
Vietnam

Report Title: **The Final Evaluation Report: Vietnam Comprehensive Eye
Care Development Project (SIBV)**

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Acknowledgements from the Project Management Boards:

The Project Management Boards and teams of Vinh Long Social Disease Prevention Centre, Tien Giang Eye Hospital, Lam Dong Social Disease Prevention Centre, and Dak Nong Social Disease Prevention Centre have expressed their gratitude and thankfulness to the **Standard Chartered Bank's 'Seeing is Believing'** Program and the **Fred Hollows Foundation** for their support in funding the project over the last four years and offering technical advice. This support has enabled the four Provinces to significantly develop the quality of their eye care services and reach out to a wider population.

Acknowledgements from the Evaluation Team:

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A diverse range of people were consulted during the field trips conducted over ten days from 31 October to 11 November 2016 in Vietnam. These included Village and Commune Health Workers, Eye Care Health Staff at Commune Health Stations, District General Hospitals and Health Centres, Provincial Social Disease Prevention Centres, Provincial Eye Hospitals and the Department of Health, and Principals and Health Personnel of Secondary Schools. Beneficiaries of the project – patients of cataract surgeries and students who benefitted from screening for refractive error and provision of spectacles were consulted for their perspectives on the services delivered.

The Evaluation Team is grateful for the wealth of ideas and experiences that were shared that drew on learning over the four years of the project. These invaluable insights have helped shape the contents of this report and will contribute towards the future development of the project for further improvements in delivering quality eye care health.

The Evaluation Team would also like to thank the Project Management Boards and their teams for their generous and kind hospitality and for arranging logistics for the field visits.

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Acronyms

BED	Basic Eye Doctor
CEC	Comprehensive Eye Care
CHS	Community Health Station
CHW	Community Health Worker
CSR	Cataract Surgery Rate
CSSS	Cataract Surgical Surveillance System
DGH	District General Hospital
DHC	District Health Centre
ECCE	Extra Capsular Cataract Extraction
FHF	Fred Hollows Foundation
HIMS	Health Information Management System
IAPB	International Agency for Prevention of Blindness
IEC	Information Education Communication
IOL	Intraocular lens
MOH	Ministry of Health
NGO	Non-Government Organisation
OCT	Optical Coherence Tomography
PBL	Prevention of Blindness
PDD	Project Design Documents
PEC	Primary Eye Care
PGH	Provincial General Hospital
PHACO	Phacoemulsification Cataract Surgery
PHC	Primary Health Care
PHD	Provincial Health Department
PMB	Project Management Board
RAAB	Rapid Assessment of Avoidable Blindness
RE	Refractive Error
SCB	Standard Chartered Bank
SDC	Social Diseases Centre
SDCC	Social Disease Control Centre
SDPC	Social Disease Prevention Centre
SHS	School Health Staff
SIB	Seeing is Believing
TGEH	Tien Giang Eye Hospital
TOT	Training of Trainers
VA	Visual Acuity
VHW	Village Health Worker
VNIO	Vietnam National Institute of Ophthalmology
WHO	World Health Organisation

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The Final Evaluation Report: Vietnam Comprehensive Eye Care Development Project

1. Executive Summary

1.1. Project Background

The Fred Hollows Foundation (FHF) has supported a project on Comprehensive Eye Care Development implemented by four participating partners: Vinh Long Social Disease Prevention Centre, Tien Giang Eye Hospital, Lam Dong Social Disease Prevention Centre, and Dak Nong Social Disease Prevention Centre in Vietnam, from January 2013 to December 2016. The project was supported by the Standard Chartered Bank (SCB) via its 'Seeing is Believing' programme

The project has four key components: I) Training, II) Facilities and equipment, III) Clinical service delivery and communications, and IV) Project management and partnership. The budget for the project, with funding from SCB (80%) and FHF (20%) was US\$1,238,689 and an additional US\$213,856 was contributed by the four project partners.

1.2. Findings

- **Training:** The project has made a significant impact in supporting a range of training courses to meet the needs of diverse eye and health care personnel across Villages, Communes, Districts and Provincial levels. The training has catered for intensive clinical courses for Doctors and Nurses while also providing support to Village and Commune Health Workers in basic eye care and communications skills. The critical areas that need to be further strengthened include the recruitment and training of Cataract Surgeons, Ophthalmologists and Ophthalmic Nurses.

- **Facilities and equipment:** Two eye care facilities were renovated and specialist eye care equipment was provided across Provincial and District eye care institutions and basic eye care kits were provided to Commune Health Stations. This has been invaluable in supporting the growth and development of the institutions to offer quality eye care services and make them more accessible to people in the province. There is a need to ensure that Doctors at district level are trained properly to use the equipment and that technical staff and/or technical sub-contractors are able to regularly maintain the equipment.

- **Clinical service delivery and communications:** The project screened 444,221 elderly people and subsidised 6,351 cataract surgeries, exceeding the target by 13% (and with Vinh Long Province accounting for 78% of these surgeries). However, there is a need to focus more on *quality surgical practice and outcomes*.

The refractive error program in 296 Secondary Schools in three Provinces (Vinh Long, Tien Giang and Lam Dong) screened over 500,000 students, and of these, over 13,000 students were prescribed with spectacles with the project providing free spectacles to 3,182 students from poor families. The project provided spectacles were of good quality but the spectacles purchased at optical shops were of poor quality – resulting in poor vision for the students.

The community eye care program involved a wide range of multi-media messaging and communication methods to raise awareness on eye care health. This contributed to raising the awareness of eye care health and encouraging the population to participate in screening and further treatment.

- **Project management and partnership:** The Project Management Boards coordinated well with a range of stakeholders, including the People's Committee, District General Hospitals, District Health Centres, Commune Health Stations and Village Health Workers network, Mass Organisations and the Departments of Health and Education. The Boards provided regular plans, meetings and follow up with monitoring support and the Fred Hollows Foundation frequently visited the Provinces to follow up on project progress with technical support.

Overall the objectives of the project were consistent with the District Plans, Provincial Plans, Provincial Blindness Prevention Plans and the plans of the eye care institutes. However, there is an emerging demand for Diabetic Retinopathy that the project did not cater for.

- **Vietnam Comprehensive Eye Care Development Project Model:** The model has identified four critical and worthy components for the development of eye care and the activities are mapped in a logical, straightforward and linear way towards meeting process, short-term, intermediate and long term objectives. The model appears to be a blend drawing on elements of a logical framework and theory of change models.

The key strengths of the project model is that the four components make practical sense to institutions across Provincial to Commune levels. However, the model needs to be elaborated to show more fully the process and be explained to project partners so they have a deeper understanding of the theoretical framework to plan and assess the project. The key area that the model does not cover is sustainability.

- **Key issues** facing project partners include: further developing and maintaining quality clinical eye care services from Province to District levels; ensuring the sustainability of eye care services by creating methods for cost recovery; and institutional business planning to create confidence and trust in eye care services for patients and attracting human resources to work in its institutes.

1.3. Conclusion

The project has made a *significant impact* in developing quality eye care services that are accessible to patients – especially the poor. It is commendable that the project has achieved and exceeded its clinical service delivery targets. However, there needs to be greater focus on providing better quality clinical services.

The investment by the Fred Hollows Foundation has made a *significant institutional impact* as it has given the Provincial and District eye care facilities across the four Provinces the opportunity to scale up their services to reach more people. The project was highly relevant – effective and efficient – and has had meaningful impact. However, sustainability has not yet been properly addressed, and this should be the focus of a follow up phase so that the Provinces can optimize their achievements for long term impact.

1.4. Recommendations

- **Clinical Treatment:** overall the Project Management Boards need to focus on delivering quality clinical treatment so that the patients will be fully satisfied and build trust and confidence in eye care services. The equipment needs to be regularly maintained and used.

- **Sustaining and Integrating Project Achievements in the Government System:** For the Project Management Boards to prepare a proposal to the Fred Hollows Foundation in the direction of sustaining and integrating project achievements within the government system. Key elements of this proposal should include: cost recovery, business and marketing plans, phase out of subsidies, and create refractive error services (including optical shops).

- **Human Resource Development:** Create a Human Resource Development Plan across the Provinces that documents the training that eye care health staff have benefited from over the last four years, conduct a current training needs assessment and plan for future training. There should be more technical support and coaching from Province to District level.

- **Patient Peer to Peer Learning and Forums:** Organise Patient Peer to Peer Learning so that they can share their experiences of cataract surgery and help others to understand what is involved and the benefits.

- **Eye Care Health Ambassadors:** For the Project Management Boards in coordination with its collaborating partners to set up Eye Care Health Ambassadors on a volunteer basis to

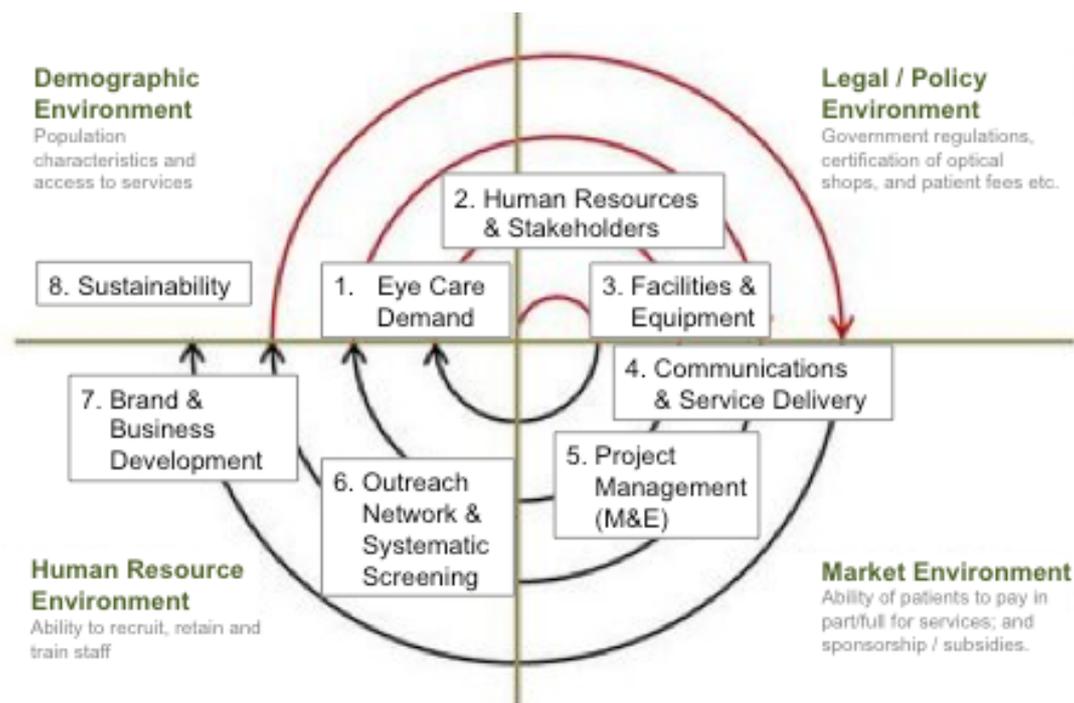
promote eye care health in the Province. This could be done at a range of levels, including Provincial and District and with students at Schools.

- **Training Materials:** Produce a Guide to Primary Eye Care Health (publication, with back up on a website or application for a mobile smart phone) that has the key information and supporting visuals and diagrams to support Village Health Workers in advising patients. This could be used by Village Health Workers for induction and to refresh learning from time to time. Translate training materials to local languages to help farmers and villagers understand the eye message in a local way and thus be better understood.

- **Comprehensive Eye Care Change Model:** For Fred Hollows Foundation with its project partners from the four Provinces and other interested stakeholders to reflect on the Vietnam Comprehensive Eye Care Development Project model and develop further based on the practical experiences over the last four years and in light of the emerging trends in Vietnam. The model could be strengthened by building on the four project components with the addition of two critical areas: setting up systematic and regular screening; developing a quality brand and business planning that includes cost recovery and planning for sustainability.

The model also shows four environmental contextual factors that need to be taken into account: Demographic, Legal/policy, Market, and Human Resources – as these will have a critical bearing on the opportunities and constraints for eye care services.

Diagram: Comprehensive Eye Care Change Model



Final Evaluation Report: Vietnam Comprehensive Eye Care Development Project

2. Introduction and Project Overview

The Fred Hollows Foundation (FHF) has worked in close partnership with the Vietnam Ministry of Health, local Provincial People's Committees, Provincial Departments of Health and the Viet Nam National Institute of Ophthalmology since 1992 to support the prevention of blindness in Vietnam. In collaboration with its partners FHF has developed a Comprehensive Eye Care Development model that integrates four components: I) Training, II) Facilities and equipment, III) Clinical service delivery and communications, and IV) Project management and partnership. This model (see Annex IV) seeks to reduce avoidable blindness and visual impairment by strengthening eye care services and facilities to enable people to access quality and affordable eye care.

Further to the needs assessments conducted in 2012, the Comprehensive Eye Care Development model was implemented by four participating partners: Vinh Long Social Disease Prevention Centre, Tien Giang Eye Hospital, Lam Dong Social Disease Prevention Centre, and Dak Nong Social Disease Prevention Centre, from January 2013 to December 2016. The project was supported by the Standard Chartered Bank through the 'Seeing is Believing' initiative that is managed by the International Agency for Prevention of Blindness (IAPB).

Vinh Long Province has benefited from FHF support in the project from 2006 - 2008 by annual projects and from 2009 to 2012 by the Community Eye Care project, in which one objective is to set up a modern eye clinic and conduct cataract surgeries at Provincial level and from 2013-2016 by the current project. Tien Giang Province has been supported by FHF from 2010-2012 by the Community Eye Care project and from 2013-2016 by the current project. For Lam Dong and Dak Nong Provinces the Comprehensive Eye Care Development Project is the first FHF supported project.

Vinh Long and Tien Giang have benefitted from previous FHF support and both Provinces are in relatively close proximity to Ho Chi Minh City where there are high quality eye care Institutions. Lam Dong and Dak Nong have only recently benefited from FHF support and are both based in mountainous areas that are not easily accessible.

3. Project Objectives

The overall long term outcome objective of the project is to *contribute to the reduction of avoidable blindness and visual impairment in Vietnam* and the intermediate outcome objective is to support local health authorities to strengthen eye care services and facilities for the delivery of high quality, affordable and accessible eye care. The project is based on FHF's Comprehensive Eye Care Development model and incorporates the following four key components and objectives:

I) Training objective:

To increase the number and skills of eye care service providers at all levels to improve the coverage, quality and sustainability of eye care health services.

II) Facilities¹ and Equipment objective:

To strengthen delivery of eye care services through improving available infrastructure and facilities.

¹ The project proposal uses 'infrastructure'. However, this implies larger city facilities such as transportation, power plants and communication systems, whereas in the project it refers to upgrading facilities within the eye care health unit and providing equipment.

III) Clinical Service Delivery and Communications objective:

To build awareness of eye care health and improve access to quality treatment for the main causes of blindness and vision impairment.

IV) Project Management and Partnership objective:

To raise the profile of blindness as a public health issue and build local provincial support for eye care health programs.

The budget for the project, with funding from SCB (80%) and FHF (20%) was US\$1,238,689. The table below shows the budget for the four year period and the additional partner contributions from each Province.

Table I: Project Budget (2013 - 2016):

No	Organisation	A Budget US\$	%	B Budget US\$ Additional Partner Contribution
1	Vinh Long Province	383,165	31	115,445
2	Tien Giang Province	261,824	21	43,396
3	Lam Dong Province	237,430	19	24,069
4	Dak Nong Province	226,693	18	30,946
5	FHF support costs	129,577	11	
6	TOTAL:	1,238,689	100	213,856
7	TOTAL BUDGET (A + B):	1,452,545		

4. Methodology and Evaluation Limitations

The methodology for the evaluation consisted of the following key activities: assessing the planned and actual log frame outputs of the project based on the project objectives; conducting clinical examinations of selected patients by two expert Doctors² from the Vietnam National Institute of Ophthalmology (patients included elderly people who underwent subsidized cataract surgery and students supported by refractive error screening in Secondary Schools along with the provision of subsidised spectacles); review of project documentation; field visits to Vinh Long, Tien Giang, Lam Dong and Dak Nong Provinces during 10 days, approximately 2.5 days in each Province, to conduct structured consultations and joint discussions with stakeholders in one to one and group meetings³ to Provincial and District project sites (see Annex I for Consultations with stakeholders and places visited). Photographs were taken at all sites and a debriefing meeting was made with the Project Management Board at the end of each visit to the Province.

The Vietnam Comprehensive Eye Care Development model was analysed, based on the evaluation criteria of relevance, effectiveness, efficiency, impact and sustainability that was

² Associate Professor, PhD., Dr. Nguyen Chi Dung conducted the examinations in Vinh Long and Tien Giang Provinces and Dr. Vu Tuan Anh conducted the examinations in Lam Dong and Dak Nong.

³ See the **Inception Report**, 21-Oct-16, attached separately for the guiding questions and terms of reference and the **Clinical Evaluation Report** for details of the clinical findings (both reports attached separately).

applied for the project evaluation. Suggestions on how the model can be improved have been made based on the practical experience of applying the model in the four project partners' provinces.

The evaluation report will be shared with the evaluation team for inputs and with the Project Management Boards for their comments. On submission of the final evaluation report (translated in Vietnamese), the Project Management Board is expected to issue a management letter in response to the evaluation report and implement any agreed follow up recommendations. A dissemination workshop will be organized by FHF in Da Nang in December 2016 with all the participating Provincial project partners to discuss and share the findings and conclusions of the evaluation and take forward recommendations.

The key limitation of the evaluation was the short time (10 days) spent conducting clinical examinations with patients and consultations with stakeholders by the evaluation team. However, all key stakeholders were consulted and the team felt that it had gained access to a diverse range of perspectives and these are fairly consistent across the four Provinces. The clinical examinations with patients were limited as they could not be expected to travel long distances to meet the evaluation team and there was limited time for the team to visit patients' home in remote locations.

5. Findings

5.1. Training

Objective: **To increase the number and skills of eye care service providers at all levels to improve the coverage, quality and sustainability of eye health services.**

5.1.1. Analysis: Training:

The project has made a significant impact in supporting a range of training courses (from a few days to six months) to meet the needs of diverse eye and health care personnel across Villages, Communes, Districts and Provincial levels. The training has catered for intensive clinical courses for Doctors and Nurses while also providing support to Village and Commune Health Workers in basic eye care and communications skills. The planned objectives have overall been met or exceeded and in only a few cases not fully met.

The critical areas that need to be further strengthened include the recruitment and training of Cataract Surgeons, Ophthalmologists and Ophthalmic Nurses. The training outputs are shown across the four provinces in the table below.

5.1.2. Table II: Training Outputs:

No	Training	Planned Outputs					Actual Outputs				
		Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total	Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total
	Province level										
1	Basic Eye Doctor	1		2	1	4	3	1	7		11
2	Cataract Surgeon	1	1	1		3	1	1			2
3	Pediatric Ophthalmic intensive techniques			2	4	6			3	2	5
4	Staff Refraction skills		1	1		2		2	2		4
5	Staff-computing	4			1	5	4		1	1	6
6	Ophthalmic nurses	1	2	2	5	10	1	1	3	6	11
7	Provincial Primary Eye Care Trainers	2	2	17	19	40	3	3	25	16	47
	District level										
8	Basic Eye Doctor	2	2	3	3	10	2	3	3	3	11
9	Staff on Refraction skills and optical techniques			3		3	2	1	3		6
10	Ophthalmic nurses / assistants	3	3	4	14	24	3	5	4	11	23
11	District Primary Eye Care trainers	2	2	3	6	13	2	3	6	13	24
12	Teachers and school medical staff on refractive error		72	69	114	255		148	589	389	1,126
	Commune level										
13	Commune Health Workers (CHWs)	228	160	92	191	671	179	160	152	199	690
14	Village Health Workers	400	780	588	774	2,542	473	806	647	580	2,506
15	CHWs / VHWs attended bi-annual conferences	60	60	60	60	240	74	69	78	70	291

5.1.3. Training Relevance:

The training for eye care personnel was highly relevant and significant as this component is critical in developing knowledge and skills to identify and treat patients. Before the project started there was limited knowledge on eye care and there was a diverse range of training needs across personnel from Village and Commune Health Workers, School Health Personnel, District and Provincial Health Administrators, Nurses, Refractionists and Doctors.

At the community level, the training was important for Commune and Village Health Workers as they have many roles in providing advice and support to eye patients. This includes communications and awareness raising of eye care health, door to door visits to inform people in the village, understanding the situation of villagers and the constraints they face (e.g. if they are farmers using chemical sprays or have limited resources etc.) and counseling patients on having surgery and ensuring they have the appropriate social and economic support. Many elderly patients are afraid and scared of operations and surgery and thus the role of the Village Health Worker is crucial in calming the patient to be able to consider the option of surgery in a balanced state. In some cases the Village Health Worker cooks for the patient and offers kindness after surgery to help them cope with daily life where they may not have family to support them. It gives the Village Health Worker immense pride when the patients eyes are restored and they can see properly again.

Note that Village Health Workers face a range of situations to deal with. For example, sometimes Vietnamese living abroad, return and fund patients to get treatment in Ho Chi Minh City and therefore villagers will compare provincial surgery with what is available in big cities. Furthermore, villagers are sensitive toward operations – they are *scared* that it will be serious and painful. Therefore, it takes time to convince patients and their family members that eye surgery can help. Some patients are elderly with no family members to support them and it is difficult to stay at a hospital without relatives or someone to care for them. In some cases, Village Health Workers have mobilized rice for patients who are very poor and asked neighbours to contribute cash for travelling. .

The training for School Health Personnel to enable them to conduct visual acuity screening for students was highly relevant and appropriate. This means that students were able to be screened and referred to the Doctors/Refractionists for further eye checks and be prescribed with spectacles. It is critical for students to be able to see properly if they are to have equal access to learning from the teacher's writings on the chalkboard and by reading books. This is particularly pertinent for students whose parents may not have any understanding of eye care health. Some students are shy to talk about their problems and if there is no screening they cannot be diagnosed properly or have the proper spectacles prescribed.

Clinical and non-clinical training was highly relevant. The training for nurses who only had general health training means that now they can provide eye care and support in minor eye surgeries. The training of trainers was particularly relevant and had a wider impact as it cascades the learning out to the Village Health Workers. At a senior level, it is critical that Doctors are trained to conduct advanced eye surgery so that operations can be performed at a local level, and thus build capacity and be nearer to the location of the patient.

The training component was highly relevant as it has resulted in greater capacity with increased numbers of personnel and improvements in their knowledge and skills. The training has benefited a wide range of personnel from Village Health Workers who raise eye care health with patients in the village to Doctors at the Provincial level who conduct cataract operations and intensive eye care. The training was particularly beneficial to personnel with less experience who would not have been able to avail of training through the traditional government system. Note that to access Government supported training, candidates have to pass stringent standards and thus, the more highly qualified staff gain access to further study opportunities. The project has encouraged staff at a range of all levels to access further training.

5.1.4. Training Effectiveness and Efficiency:

Overall the training was effective and efficient as it was conducted with a good balance of theory and practice and trainees had the opportunity to interact with people from other districts (including mountainous areas) and learn from them. Trainees appreciated the caring, participatory and interactive methodology of the trainers, including role play, their communication skills and use of visual materials. This is in contrast to previous training that was more lecture style and less participatory. The trainers motivated trainees and created a friendly atmosphere that was conducive to learning. Trainees also had the option of

contacting their trainers after the course for follow up support and clinical advice through mobile phone contacts.

The training was effective in strengthening the network and connections between Village Health Workers and the District Health Centres. The training was also instrumental in improving the knowledge and skills in eye care across a wide context from village to the top level of the eye clinic where advanced skills are needed to conduct cataract surgery. Clinical training was provided to Provincial and District levels and non-clinical (i.e. awareness raising of eye care health and communications) to District and Commune levels and village.

All of the trainees interviewed during the evaluation have been able to apply their skills in the workplace after training and develop these further with ongoing practical work experience. Therefore, the knowledge and skills learnt are being actively applied by doctors and nurses delivering clinical eye care services and by health personnel in raising awareness on eye care health. This has made the training highly meaningful as staff feel more confident and proud when they support people in improving their eye care health.

In the case of Ptosis surgery, which is a complex operation to get a good outcome, there is a need for more hands-on training to improve skills. Doctors need to gain experience in diagnosis and operation skills and this take time to build up and develop. It would be useful if doctors could be involved in at least two Ptosis surgery campaigns per year to develop their knowledge and skills.

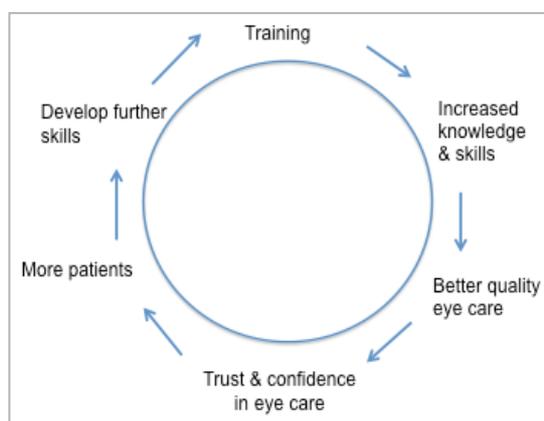
One of the constraints faced is that health personnel at District and Commune levels have different health roles and eye care is a smaller part of their main responsibilities. This puts a strain on their time commitment to eye care (i.e. in some cases some Doctors and Nurses work two days a week at the Eye Clinic). In addition, Village Health Workers, especially those who have to travel far to visit households in remote places, need support for transportation costs (motorbike fuel).⁴

5.1.5. Training Impact:

By increasing the capability and capacity of eye care personnel, along with the provision of quality facilities and equipment, the eye care institutes have developed better knowledge, skills and experience. This has contributed significantly to delivering quality eye care services with greater outreach to District levels – making services more accessible to communities.

Increased training should ensure quality eye care results and this builds trust and confidence with prospective patients and attracts personnel. This should lead to a virtuous cycle that continually develops, as shown in the diagram below.

Diagram: Virtuous Training Cycle



⁴ In Cu Jut District, Dak Nong Province, a Village Health Worker earns 230,000 VND per month.

While all the eye departments and centres have benefitted, as a result of the project, from greater capability and capacity of their staff, technical equipment and awareness raising across the Province along with developed coordination, the Eye Clinic of Vinh Long Social Disease Prevention Centre, will be upgraded to a Provincial Eye Hospital by 2017, and their insurance code is currently being processed. This is a tremendous institutional result as it means that the Eye Hospital will be able to avail of health insurance and have better facilities and capacity to treat more patients.

5.1.6. Training Sustainability:

Training has been an important component of the project as the capability and capacity of staff cannot be developed unless they learn new knowledge and develop their skills. Without knowledge and skills the eye clinic would not be able to attract new patients and build the trust of eye care health services in communities across cities, districts and villages in the provinces. Now that the capacity of staff has been built and eye care health services are being delivered to more people, there are opportunities for training to be sustainable. This will be possible *if* the Provinces can generate income to cover its total costs, including the costs for training, drawing on a range of income sources – including health insurance, patient contributions, private sector and NGO sponsorship and support of Mass organizations.

In order to calculate and apportion the training costs it will be necessary to estimate costs for training along with refresher courses for the range of health sector staff from Village Health Workers, School Health Personnel to nurses and advanced surgeons. A percentage of the total cost of eye care service delivery could then be apportioned for training purposes.

5.2. Facilities and Equipment:

Objective: **To strengthen delivery of eye care services through improving available infrastructure and facilities.**

5.2.1. Analysis: Facilities and Equipment:

Renovation of two eye care facilities were supported by the project: an Operating Theatre and Examination room in Dak Nong Province and a Child Examination room in Tien Giang Province. Specialist eye care equipment was provided across Provincial and District eye care institutions and basic eye care kits were provided to Commune Health Stations. This has been invaluable in supporting the growth and development of the institutions to offer quality eye care services and make them more accessible to people in the province.

The budget for renovating two eye care facilities in two provinces and supplying all four provinces with specialist equipment was US\$375,321 and the actual expenditure was US\$339,721, 9% variance. (See Annex II for the list of equipment provided).

A spot check of the medical equipment was made at the four Provincial field sites visited by the evaluation team's clinical experts. The findings are given by province below and these highlight:

- Most of the equipment is in good use and labelled carefully with the donor logos and asset labels
- District doctors are trained properly to use some equipment
- Technical staff or technical consultants are able to regularly maintain the equipment
- One of the Hospitals require the Doctors to pay for any equipment breakages. This puts undue pressure on Doctors who do not want to risk using the equipment for fear of having to pay for potential damages.

- Vinh Long Province

The team checked the use of equipment provided by the project in the Eye Department of Social Disease Prevention Centre and two Eye Departments of Hospitals in Binh Tan and Vung Liem Districts. The results show that:

Most equipment provided by the project is well used and this helps to contribute to increasing the quality of treatment. The equipment is labelled carefully with the donor logos and asset label. However, the medium/minor surgery set provided to the hospital in Binh Tan District is combined from medium and minor surgery sets as advised by the PMB, in which the common pieces were priority selected to be purchased, that is why it is still lacking 4 pieces to make up the full minor surgery set (Lacrimal Probes, Chalazion forceps, Chalazion Curette and Plate). These pieces need to be procured by the District Hospital when there is demand from eye patients. The team also gave instructions and tips to the Doctor, in Vung Liem District, on how to use the slit lamp for diagnosing eye diseases and the ophthalmoscope for early detection of patients with cataract.

- Tien Giang Province

Most equipment provided to Tien Giang Eye Hospital, Eye department of Tan Phuoc District and the Regional General Health Examination Clinic in Cai Lay District is in good use and labelled carefully with the donor logos and asset label. However, the anesthesia machine and synoptophore are rarely used in Tien Giang Eye Hospital. These pieces of equipment are mostly used for child ptosis, squint surgeries in 1-2 months/year. Besides, Tien Giang Eye Hospital is lacking an Anesthesiologist for regularly surgery for children and lacking a Nurse/Optometrists to use the synoptophore.

Equipment in the Regional General Health Examination Clinic in Cai Lay District is just used two days per week because the eye care staff have to work both in the District Health Centre and the Regional General Health Examination Clinic in Cai Lay District (2 days per week).

The evaluation team also took the chance to guide two Refractionists of Tien Giang Eye Hospital on using the synoptophore for squint diagnosis and eye exercises to recover vision for children who have a squint.

- Lam Dong Province

- Don Duong District Health Center

Seven pieces of ophthalmic equipment were checked. All equipment was labelled carefully with the donor logos and asset label. At the time the evaluation team visited, the ophthalmoscope had weak battery energy. The slit lamp was not frequently used due to three reasons:

- The Eye Doctor has just come back to work after six month maternity leave.
- Any damages to equipment must be paid for by the user according to Hospital regulations and this discourages doctors from using the equipment.
- Due to the lack of doctors in the hospital, the Eye Doctor has to work in other disease departments so she cannot focus totally on the work in the eye department.

Note that over the four years of the project, the FHF Project Manager and Project Officer has regularly checked the equipment at the District and found that it was used for daily eye examinations.

The Nurse in charge of using the trial lens set is not trained on Refractive Error for using it properly.

- Di Linh District Health Centre

- The slit lamp is good quality. However, after the electric bulb had been damaged twice, the light is weak and this is why it is not often used. The ophthalmoscope is used frequently instead.
- The trial lens set is infrequently used by the Doctor.
- The Schiottz tonometer has not been put in operation because the Doctor has not been trained for its use.
- The other medical equipment is used moderately.

• Dak Nong Province

Most medical equipment is used frequently and efficiently. However, the E-chart does not fit with the small size of the eye examination room and patients have their eyes checked outside of the room.

The Schiottz tonometer has just been used by one Doctor. The other Doctors have been using the Maclakov tonometer. It is recommended that the Schiottz tonometer should be used instead of Maclakov tonometer.

The operation theatre is new and modern. Notably, there are two ovens for sterilization, one used for micro equipment and one for surgical clothes. The surgical tool kits are kept in good condition.

- Dak R'Lap District

The medical equipment is in good use and maintained in good condition. The Schiottz tonometer has not been used because the Doctor has not been trained on how to use it. However, it is hoped that the Doctor will use it frequently after being trained by Dr. Tuan Anh during the evaluation visit.

- Cu Jut District

Most equipment provided by the project has not been used frequently over recent months because the Doctor has been taking a two-year training course to become an Eye Doctor (level 1). The light of the slit lamp is currently not working and the cause has not yet been detected. The Hospital should pay more attention to maintain this equipment properly.

5.2.2. Table III: Facilities and Equipment Outputs:

Level	Facilities & Equipment	Planned Outputs					Actual Outputs				
		Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total	Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total
Province	Renovation of eye facilities: Operating Theatre and Exam. rooms in Dak Nong and Exam. room in Tien Giang	1		1		2	1		1		2
		\$6,925		\$4,000		\$10,925	\$9,612		\$3,181		\$12,793
Province	Provincial facilities receive medical equipment to upgrade	\$33,409	\$72,038	\$25,000	\$43,271	\$173,718	\$71,575	\$75,383	\$37,216	\$35,111	\$219,285
	Provincial facilities receive non-medical equipment to upgrade	\$38,040	\$5,631	\$39,336	\$17,669	\$100,677	\$1,993	\$3,154	\$34,302	\$16,410	\$55,859
	Health Info. Man. Systems	0	0	\$16,714	\$16,714	\$33,429	0	0	\$15,658	\$15,757	\$31,415
District	10 District Hospitals receive equipment to enable a higher level of basic eye care	2	3	3	2	10	2	3	3	2	10
		\$15,786	\$19,436	\$32,877	\$2,776	\$70,875	\$5,028	\$4,555	\$14,988	\$2,928	\$27,499*
Commune	Provision of basic eye care kits to enable 169 Commune Health Stations to provide basic diagnosis, treatment of common eye diseases, and referrals	57	40	30	42	169	57	40	30	42	169
		\$760	\$1,520	\$821	\$1,596	\$4,697	\$2,501	\$1,600	0	\$1,740	\$5,841

* Note: \$US27,499 was not included \$US20,171 (LD: \$US12,132, DN:\$US7,939) of equipment provided to district level from the saving of equipment purchase for provincial level. This \$US20,171 was charged in the provincial medical equipment line.

5.3. Clinical Service Delivery and Communications:

Objective: To build awareness of eye health and improve access to quality treatment for the main causes of blindness and vision impairment.

5.3.1. Analysis: Clinical Service Delivery and Communications:

- Cataract Surgery:

The clinical service delivery across the four Provinces screened 444,221 elderly people and subsidised 6,351 cataract surgeries, overall, exceeding the target by 13% (and with Vinh Long Province accounting for 78% of these surgeries). While this data is impressive, the clinical examinations by the evaluation team during the field trips, which only examined a small number of patients, highlights the need to focus more on *quality surgical practice and outcomes*.

A summary from the checks on VA after cataract surgery by the two clinical evaluation experts in three Provinces (excludes Tien Giang) shows an overall rate of good outcomes (VA >6/18) as 55%. Details are given in the table below:

5.3.2. Table IV: VA check post cataract surgery:

No	Province	No of Patients	No of Eyes	Poor (eyes) <6/18	Borderline (eyes)	Good (eyes) VA >6/18	% Eyes (Good outcome)
1	Vinh Long	20	26 *	12		14	64% **
2	Lam Dong (Dalat)	8	11	3	5	3	27%
3	Lam Dong (Don Duong)	6	8	4	3	1	12%
4	Lam Dong (Di Linh)	9	13	3		10	77%
5	Dak Nong (Dak R'Lap)	5	6		1	5	83%
6	Dak Nong (Cu Jut)	5	7	1 ***		6	86%
7	Sub-Totals:	53	71	23	9	39	55%

* Includes 4 eyes due to other diseases that cannot ensure good VA after cataract surgery.

** % based on 14 over 22 eyes.

*** Complication of posterior-capsular rupture.

The cataract surgery is highly relevant as it gives the elderly with cataracts the opportunity to regain their sight and participate fully in their family and surrounding community. If the elderly are unable to see they become a burden on their family and community.

Patients benefited from talking with other patients. One elderly patient noted that *"I asked other patients about the surgery and they said it was ok, so I decided to come. At first I was afraid to have the surgery, but after advice from the other patients I gained confidence"*. Another patient noted that if the project had not supported the project: *"I don't know where else I could go. I will have to live with blindness"*.

The cataract surgery has had significant impact on the eye care health of elderly patients as having their sight restored means that they are able to live productively and usefully in their households and local communities. It also means they can contribute positively to their socio-economic development and not have to depend on others. As one patient noted: *"I can do many things including reading books, though I need to wear glasses to see properly. I am very confident in driving a motorbike"*. Another patient added: *"I will be happier – I can help*

my children to do the housework, cooking or taking care of the children. I live with my daughter and she has her own business making bread. I can help her with the baking”.

The patients interviewed were not aware of the cost of cataract surgery and were grateful to the project for funding the service. However, the program will need to consider how it explains the cost of surgery as there could be different interpretations on the subsidy. One of the patients had heard rumours that if something is subsidized it is not of good quality and if it is expensive it means good quality service. The program will need to convince others who are skeptical about ‘free’ or subsidized services.

- Refractive Error:

The refractive error program in 296 Secondary Schools in three Provinces (Vinh Long, Tien Giang and Lam Dong) screened 514,625 students, and of these, 13,312 students (5,424 in Vinh Long, 4,898 in Tien Giang and 2,990 in Lam Dong) were prescribed with spectacles to be able to see clearly. This is critical as these students need to be able to read the chalkboard in the classroom and study their books to perform well at school.

The project supported 3,182 students from poor families with free spectacles⁵ and 10,130 students (76%) with prescriptions for spectacles that were purchased from private sector optical shops. While the evaluation team found that the project provided spectacles were of good quality it exposed that spectacles purchased at optical shops were of poor quality – resulting in poor vision for the students. This means that the project is only able to assure quality refractive error services for 24% of the students that have been screened where it has provided free spectacles. The spot checks by the evaluation team on students who had purchased spectacles from optical shops found that they were of poor quality resulting in unclear vision and difficulties for students. Furthermore, the students with project provided spectacles were 76% VA ≥ 6/9, whereas students who purchased their own spectacles were 37% with VA ≥ 6/9.

5.3.3. Table V: VA check on students:

No	Province	No of Students checked	Free spectacles	No of students with free spectacles VA ≥ 6/9	% with free specacles VA ≥ 6/9	No of students bought spectacles	No of students bought spectacles VA ≥ 6/9	% with bought specacles VA ≥ 6/9
1	Vinh Long	22	9	6	67%	13	8	62%
2	Tien Giang	30	16	10	62%	14	5	36%
3	Lam Dong	20	12	12	100%	8	0	0%
4	Sub-Totals:	72	37	28	76%	35	13	37%

The impact of the refractive error program is that a systematized screening process has been set up and is being conducted every year to identify students who need to wear spectacles or who have eye diseases that need specialist treatment. The project has provided good quality spectacles to poor students free of charge and this has allowed them to learn alongside their peers. One student noted that *“before we cannot see the chalkboard and cannot read the books. Now it is very different. We can see”.*

The school would like the project to continue funding the screening program and the supply of free spectacles for poor students. However, the Fred Hollows Foundation has limited funding

⁵ The project provided free spectacles to poor students and project partners selected and further to verifying the quality standards, signed a contract with local optical workshops, to produce the spectacles. In November to December 2016, the project will provide 900 more free spectacles to students (Tien Giang:750 and Lam Dong:150) as this cost will be covered partly from the savings amount generated from a higher US\$ and VND exchange rate.

capacity and cannot continue funding the program indefinitely. Therefore, there is a need to study how the school screening can continue systematically and regularly each year (and it should be a part of the government yearly health check) to support students in eye care health. However, note that this also requires alignment with the Department of Education's recruitment policy on School Health Personnel.⁶

- Community Eye Care Communications:

The community eye care program involved a wide range of multi-media messaging and communication methods to raise awareness on eye care health. These included: small group communication events, radio messages at Commune level, school talks on refractive error and information education and communication materials (leaflets, posters and billboards) that were circulated to the project sites. This contributed to raising the awareness of eye care health and encouraging the population to participate in screening and further treatment. For example, in Tan Phuoc District in Tien Giang, without project support they would not have been able to conduct outreach and identify patients for cataract surgery. Before the project there was basic and limited capacity. After the project there is better equipment and screening is carried out in 13 communes.

Information on the cataract screening was effective and given by the government loudspeaker system (electronic loudspeakers) in villages. However, the loudspeaker system does not reach every household and in some cases it is not clearly audible. The Commune Health Workers delivered leaflets and transferred the message verbally and CHWs issued a letter to the Village Head who knew which households to inform. This communication system is integrated within the government system and this should be sustained.

Further study is needed to demonstrate the most cost effective communication methods and a strategy is required to plan how the most feasible methods can be funded. Furthermore, the program should acknowledge the role of the key stakeholders at the village level, including the Village Head and Village Health Worker, who have in-depth knowledge of the local inhabitants. These stakeholders are an integral part of the health network and these inter-personal communication channels need to be optimised with the appropriate support mechanisms.

The table below shows the quantitative data for the clinical service delivery and communications.

⁶ In Tien Giang Province there has been a policy change and a freeze on new recruitment of School Health Personnel

5.3.4. Table VI: Clinical Service Delivery and Communications Outputs:

No	Clinical Service Delivery & Communications	Planned Outputs					Actual Outputs				
		Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total	Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total
1	No. of patients screened at the Eye Departments and in the community	60,000	59,000	152,000	69,000	340,000	28,184	37,433	275,690	102,914	444,221
2	No. of cataract surgeries subsidised	600	900	100	4,000	5,600	673	647	63	4,968	6,351
3	No. of subsidised child eye care treatments			120	10	130			188	91	279
4	School-based Refractive Error (RE) program		12	159	122	293		55	135	106	296
5	No. of students screened for RE		36,000	408,960	233,492	678,452		37,642	284,453	192,530	514,625
6	No. of free spectacles for poor school children		450	444	629	1,523		547	1,429	1,206	3,182
7	No. of other subsidized eye care treatment (pterygium, PCO)	470	300	120	800	1,690	466	304	55	271	1,096
8	Community eye care awareness * details below										
9	* Small group communication events					600	207	92	321	313	933
10	* Radio messages at commune level					1,881	1,380	798	10	141	2,329
11	* School talks on RE					92		10	93	35	138
12	* IEC materials produced and circulated billboard, leaflet, poster					47,080	39,839	23,632	6,508	6,472	76,451

5.3.5. Cataract Surgery: Key Clinical Analysis

(This section is based on selected examinations conducted by the evaluation team's clinical experts in the 4 participating Provinces).

- Vinh Long Province

20 patients were checked with 26 eyes, those who had received free surgery in the Eye Department of SDPC and Binh Tan and Vung Liem Districts.

- The results show that: 26 eyes surgeries were performed by Phaco technique and hard Intraocular Lens (IOL) inserted, of which 1 eye cannot insert IOL due to a complication.

- The good outcome for 1 month post cataract surgery is quite low at 63.6% (WHO recommends 80%)
- The main reason for the quality of post cataract surgery is due to the irrelative IOL power and uncorrected RE after surgery (31.8%)
- The poor outcome due to the complication of post cataract surgery at 4.5% is considered acceptable (WHO recommends <5%)

- Tien Giang Province

18 children with ptosis and squint were re-examined in the pediatric room of Tien Giang Eye Hospital, of which 14 children with squint (9 males, 5 females) and 4 children with ptosis (2 males, 2 females).

- Most children with squint have good outcomes (57.1%). 80% of cases who have VA < 6/9⁷ after surgery is due to uncorrected RE before and after surgery. Due to complicated disease, the hypo-correction cases need to be re-operated.
- 75% of ptosis cases are hypo correction so that they need to be re-operated.

- Lam Dong Province

23 patients with 32 eyes were checked, of which 7 eyes were operated by Phaco technique.

- Of the 32 eyes checked, 10 (31%) with poor VA (VA<6/60), 8 (25%) with borderline VA, 14 (44%) with good VA (VA >6/18). The main reasons for poor VA are due to the increasing/secondary post-capsular opacity and the uncorrected IOL power.
- The quality of cataract surgery should be improved further. This can be explained that the surgeon has just practiced cataract surgery for four years but not frequently. Besides, trainers from Danang Eye Hospital are usually changed (3 trainers), their surgery technique could be a little different that made some difficulty for the trainees to acquire. Meanwhile, trainees in Dak Nong have been coached by one trainer from VNIO during 4 years.

- Dak Nong Province

- 10 patients with 13 eyes were checked, of which 11 eyes (85%) with good VA (VA >6/18), 1 (7.5%) with borderline VA, 1 (7.5%) with poor VA (VA<6/60). The main reasons for poor and borderline VA are due to the increasing post-capsular opacity and complication of posterior-capsular rupture.
- In order to have more objective assessment results, patients should be random selected by the evaluation team. However, the project partner provided the explanation that due to the difficulties of traveling and scattered patients it takes time and is difficult to gather post-surgery patients.

5.3.6. Refractive Error: Key Clinical Analysis:

(This section is based on selected examinations conducted by the evaluation team's clinical experts in the 3 participating Provinces).

⁷ As in Snellen VA chart.

- Vinh Long Province

9 students who received free spectacles by the project and 13 students who bought glasses by their family had their eyes checked. The results show:

- After 1 year, the percentage of students with subsidized spectacles have good vision with VA $\geq 6/9$ are 66.6%. This result is good as comparison with WHO recommend (33%).
- However, 3 out of 9 students, have the vision acuity with subsidized spectacles $< 6/9$. This accounts for 33.3%, due to increasing RE
- In the group that bought spectacles, VA $\geq 6/9$ accounts for 61.5%, Other students with VA $< 6/9$ is due to increasing RE (30.8%) and unmatched PD and LD (7.7%)
- It is notable that 1 student with bought spectacles has low vision due to the high optical power and wrong technique. The student must change their glasses immediately. The child was informed and asked to tell their parents, and the name of the child has been given to the School Health Personnel to follow up with the parents.
- Regarding the quality of refraction service, 100% glasses subsidized by project meet the standard. Meanwhile, for self-purchased glasses, 38.46% are acceptable.

- Tien Giang Province:

16 students who had received free spectacles by the project and 14 students who bought glasses by their family had their eyes checked (at My Phuoc secondary school in Tan Phuoc District and Phu Nhan secondary school in Cai Lay district).

- After 1 year, the percentage of student with subsidized spectacles have good vision with VA $\geq 6/9$ are 62.5%. This result is good as comparison with WHO recommend (33%).
- However, 6 out of 16 children have the vision acuity with subsidized spectacles $< 6/9$. This accounts for 25%. Among the students 1 due to amblyopia and another lost his glasses, so that still only 4/16 = 25% have poor vision due to developing myopia. In the group that bought spectacles, VA $< 6/9$ accounts for 65.3%.
- It is notable that 1 student with bought spectacles have low vision due to the high optical power and wrong technique. They must change their glasses immediately. The child was informed and asked to tell their parents, and the name of the child has been given to the School Health Personnel to follow up with the parents.
- Regarding the quality of refraction service, 80% glasses subsidized by project meet the standard. Meanwhile, for self-purchased glasses, 64.3% are acceptable.

- Lam Dong Province

In Da Lat city, at Phan Chu Trinh secondary school, 20 students from 13-15 years old had their eyes checked. 19 are wearing spectacles bought by themselves because they were eye checked or spectacles provided by the project 2 years ago. The remaining 1 student is still wearing spectacles provided by the project.

- 6 students (30%) with their current glasses have VA $< 6/9$. The others have good vision with VA $< 6/6$
- 5 students (25%) have the variance between the lenses distance (LD) and the pupillary distance (PD) above 4 mm that do not meet requirement of < 4 mm.

In Don Duong district, at Thanh My Secondary School, 20 students had their eyes checked, of which 12 students are provided free spectacles by the project and 8 students bought by themselves

- All students wearing subsidised spectacles have good vision with VA>6/9. 1 of these students wearing over power/capacity spectacles (0.5 dipodies higher) and the teacher will inform his parent for new spectacles. 11 of these 12 students have acceptable variance between LD and PD (+/- 2mm). One student who has variance of 9 mm (LD vs PD), was introduced to the district preventive medicine center to replace the spectacles.
- No students wearing self-purchased spectacles have good VA at 6/6 in both eyes. One student has accommodated disorder in both of his eyes (-1,0 dipodies and N), he should not need to wear spectacles. 1 student with self-purchased spectacles also have large variance between LD and PD (10 mm – 2 mm).

These results can be explained that there is more attention for eye care of children living in cities than in rural areas. However, the quality of spectacles made by private sector optical shops need to be paid more attention because the variance between the lens distance and the papillary distance is still high.

5.4. Project Management and Partnership:

Objective: To raise the profile of blindness as a public health issue and build local provincial support for eye health programs.

5.4.1. Analysis: Project Management and Partnership:

The project management and partnerships with stakeholders, including the People's Committee, District General Hospitals, District Health Centres, Commune Health Stations and Village Health Workers network, Mass Organisations and the Departments of Health and Education was meaningful and significant. The Project Management Board gave good coordination with the various organizations by providing regular plans and meetings and follow up with monitoring support. The Fred Hollows Foundation also frequently visited the Provinces to the project sites and followed up on project progress with technical advice, checking equipment and training staff in project accounting and reporting where necessary.

The objectives of the project were consistent with the District Plans, Provincial Plans, Provincial Blindness Prevention Plans and the plans of the eye care institutes. However, there is an emerging demand, according to the Project Management Boards for Diabetic Retinopathy that the project did not cater for. There are also opportunities to tailor the training to reflect local disease patterns (for example: where people live on boats in some areas and are in daily contact with water and those who live in mountainous areas).

The key lessons for the Project Management Boards in order to be effective and efficient include: careful planning in advance (including scheduling, quarterly plans, and regular follow up monitoring and clear description of duties for each member of the Board) and the coordination with the relevant agencies: Provincial Eye department, District Hospital, District Health Centre and Mass organizations (Association for the Elderly and Women's Union). The Project Management Boards have also promoted good quality surgery so that people in the provinces will believe in the eye care service.

Key challenges of the Project Management Board across the four Provinces includes:

- Lack of advanced eye care health personnel, including specialized ophthalmologists (level 1);
- Attracting eye care health personnel to the Province and Districts (while many prefer to work in the big cities)
- Training opportunities for staff

- Timing constraints, staff are busy with their work and unable to attend training
- Coordinating School eye care health at a busy time when Schools restart
- The project supported Extra Capsular Cataract Extraction (ECCE) cataract surgery when the PHACO technique is preferred
- Multi-tasking for staff with different roles (for example, at a District Health Centre, a basic Eye Doctor also works as a General Practitioner)
- Staff turnover and changing roles (some staff leave to work in big cities and some staff are reallocated different roles)
- Government policy and regulations (e.g. for Lam Dong, the Ministry of Health has issued a circular (No 51) stating that Social Disease Prevention Centres should focus on prevention and not treatment, as hospitals are responsible for treatment. This leaves two options for the Provincial authorities to decide on: a) merge the Prevention Centre with the Hospital or b) develop the Prevention Centre to an Eye Hospital. However, there is some flexibility as the Prevention Centre can provide cataract surgery. Another example is that the Department of Health has stringent qualifications for surgeons and thus surgeons cannot gain the experience they need as they don't qualify. Lastly, Government policy does not allow the Prevention Centre to collect a fee for outreach services of eye screening on refractive error)
- Some Vietnamese charities from outside the Province that conduct eye surgery in Lam Dong do not follow quality protocols.⁸
- Lack of coordination between the Departments of Health and Education due to the low interest in eye care in Lam Dong and Vinh Long.

The sustainability of the project management mechanisms and partnerships will be seen when they are fully integrated within the government mainstream system (i.e. at various government levels from Commune to District incorporating eye care as an integral part of their work with the costs being covered by their own mechanisms). Note that Tien Giang and Lam Dong Provinces have approved their Provincial Blindness Prevention plans and this will be an excellent foundation for the eye care services to be implemented over the next 5 years.

The government system will need to maintain and grow the network of Health personnel across Commune to Provincial levels and this will require regular follow up support and induction orientation for new staff and refresher training for existing staff. This network will ensure that there is awareness of eye care health facilities and treatment in the Province and provide a referral system for patients for screening and treatment.

5.4.2. Table VII: Project Management and Partnership Achieved Outputs:

No	Project Management and Partnership	Dak Nong	Lam Dong	Tien Giang	Vinh Long	Total
1	Provincial project management board (PMB) functions well	21	14	10	81	126
2	World Sight Day events organised yearly in target provinces	4	4	4	4	16
3	Project management capacity of local provincial partner strengthened	3	3	3	3	12

⁸ This occurred in 2013 - 2014 and from 2015, the Department of Health assigned the Eye Department of the SDPC to monitor charities on cataract surgery. Some charities do not meet the requirements of quality protocols and they cannot conduct cataract surgery. This results in the CSR in Lam Dong Province not increasing.

Note: Twelve Project Management Board (PMB) members attended the project orientation workshop, in which a session on project management was introduced. Eight PMB members, except accountants, also attended the workshop on cataract surgery quality management. Six PMB members of Dak Nong and Lam Dong Provinces conducted a study tour to Vinh Long SDPC.

5.5. Project Model: Vietnam Comprehensive Eye Care Development

Long-term outcome objective:

To contribute to the reduction of avoidable blindness and visual impairment in Vietnam

Intermediate outcome objective:

To strengthen eye health services and facilities for the delivery of high quality, affordable and accessible eye care

5.5.1. Analysis: Project Model:

The project model has identified four critical and worthy components for the development of eye care health: I) Human Resource Development (training), II) Infrastructure Development (facilities and equipment); III) Communications and Service Delivery; IV) Project Management (including monitoring and evaluation) and Partnership. The model rightly shows the need for a range of stakeholders to be involved from the Project Management Board to Provincial, District, Commune and Village health personnel to patients – including school children and patients in the community. The activities are then mapped in a logical and straightforward way towards meeting process, short-term, intermediate and long term objectives. The diagram (shown in Annex IV) appears to be a blend drawing on elements of a logical framework and a theory of change model.⁹

The key strengths of the project model is that the four components are straightforward and make practical sense that can be understood by institutions across Provincial to Commune levels. However, the model needs to be elaborated to show more fully the process and explained to project partners so they have a much deeper understanding of the theoretical framework to plan and assess the project. Note that there was little feedback on the theoretical model from partners during the consultations across the four Provinces.

If we apply the evaluation criteria: I) relevance, II) effectiveness and efficiency, III) impact and IV) sustainability to the model, these criteria are well met as the project has supported the eye care institutions in developing their human resource expertise, setting up facilities with the appropriate technical equipment, communications to raise awareness and provide valuable eye care services and project management to develop their coordination skills across the Province. However, sustainability is not included in the model and this is a critical gap that needs to be further developed.

The project has supported project partners with subsidies for cataract surgery and provision of free spectacles for poor patients. However, there is no sustainability plan to show how these subsidies can be taken up by other sustainable means. A cross-cutting component of the project on sustainability would support project partners in building on external investments

⁹ A **Logical Framework** shows a linear progress from: Assumptions and Risks; to Inputs; Activities; Outputs; Outcomes; and Impact. A **Theory of Change** model is more complex and is an “ongoing process of reflection to explore change and how it happens. The focus is on what will change and not on what is planned”. A theory of change requires assumptions to be made explicit and there should be a causal pathway showing the linkages from contributions to the desired change (BOND – the UK membership body for organisations working in international development: training materials, 2016).

(such as the project support: technical advice and funding, by the Fred Hollows Foundation) and being able to grow and sustain those initiatives independently. For example this could involve developing methods of cost recovery to pay and sustain eye care services.

The elements that the project model does not cover includes:

- Brand and Business Planning of Eye Institutes – creating a shared sense of commitment with internal and external stakeholders to build the brand of the institute and outlining the vision and values it stands for and putting this into practice and marketing these activities to a wide audience.
- Cost Recovery for Services – setting out methods to calculate and allocate services costs and how these can be recovered, i.e. by charging patient fees, and/or drawing on government budgets and/or seeking corporate/NGO sponsorship.¹⁰
- Analysis of the Legal and Policy Environment – national government regulations, international standards that govern and influence ways in which institutions function, (for example the current situation in Vietnam is that Eye Hospitals and General Hospitals are not allowed to set up optical shops and dispense spectacles as spectacles are not defined as ‘medicine’. Furthermore, there is a government policy shift that proposes that hospitals transition from central government financing and management to being independently managed and financed.

These three additional components (above) are critical in supporting institutions in being independent and sustainable. Therefore, the project model would be greatly enhanced by incorporating these elements and making explicit assumptions that can be tested. It should also show a causal pathway illustrating how interventions will contribute to the desired change.

The project model appears to have been static over the project period of four years. And while a theoretical model can never be fully reflected in reality, there should be a process to modify and adapt the model to different institutional, geographical and sectoral (i.e. eye care) contexts. For example, at the Provincial level, the eye care personnel are mostly specialised and focussed on eye care full time. However, at the Village, Commune and District levels, for most personnel, eye care is a part time role with a wide range of other health care responsibilities. Thus, these stakeholders may need other incentives to motivate and encourage them to contribute actively to the project.

The experience of the project partners collaborating with the Fred Hollows Foundation in using the project model during four years now gives a good opportunity to explore ways of improving the model to meet the emerging needs and situational context in Vietnam. This could help steer project partners towards a new strategic direction with focus on quality eye care services that create trust and confidence and long term sustainability.

¹⁰ Tien Giang Province has ideas on mobilising funds from medical companies who are contracted to supply equipment/services.

6. Conclusion

The Vietnam Comprehensive Eye Care Development project in Vinh Long, Tien Giang, Lam Dong and Dak Nong Provinces has made a *significant impact* in developing quality eye care services that are accessible to patients – especially the poor. The project has supported the four Provinces in four years in developing their human resource skills, upgrading facilities and providing technical equipment, and supporting communications for raising awareness on eye care health across a range of local communities.

The outreach program has supported screening for cataracts for the elderly and refractive error screening for students in Secondary Schools and the project has achieved and exceeded its targets. This includes the completion of 6,351 cataract surgeries and over 500,000 screenings for School children for refractive error, with subsidies for the cataract operations and free spectacles for School children from poor households. This has resulted in better quality eye care being more accessible to people in the project supported parts of the Provinces. However, there needs to be greater focus on providing better quality clinical services so that patients benefit further, and through word of mouth, trust and confidence in eye care services across the Provinces will be built and the reputation of the eye institutes enhanced.

The investment by the Fred Hollows Foundation has made a *significant institutional impact* as it has given the Provincial and District eye care facilities across the four Provinces the quality skills and equipment needed in order to scale up services to reach more people. This has meant that while personnel were formally trained, they have also gained invaluable hands on experience in treating more patients. This gives the four Provinces an excellent platform to further develop quality clinical treatment and upscale services and attract eye care personnel.

The project has only covered parts of each of the Provinces. Therefore, there is a need to adapt and replicate the project interventions so that communities from other Districts can benefit from the advancements that have been made. This will require strategic planning to upscale the program in the long term and reach the remaining areas in a phased way – that is realistic and achievable. There is a high demand for cataract surgery for the elderly and refractive error screening and the provision of spectacles for children. Therefore, it is imperative that the Provinces consolidate their learning from the last four years and plan ahead to replicate and upscale the program.

The training component of the project has been successful in upgrading the knowledge and skills of a wide range of eye care personnel from Village to Province. Along with the other components of the project, including the provision of technical equipment, upgradation of facilities, conducting screening campaigns and providing clinical treatment, eye care services have developed immensely to respond to a growing demand. This has resulted in the project being highly relevant – effective and efficient – and having deep and meaningful impact. However, the key criteria of sustainability has not yet been properly addressed, as the Provinces have relied on the project for subsidies for cataract operations, screening activities and the provision of spectacles. Sustainability needs to be addressed in a follow up phase so that the Provinces can optimize their achievements for a much longer term impact - by generating its own income to cover the costs for eye care services.

7. Recommendations

7.1. Clinical Treatment

- Vinh Long Province:

7.1.1. Refractive Error

- Patients need to have their RE correction with glasses after cataract surgery, half a month to 1 month. Besides, doctors should pay careful attention in measuring the patient's biometry and the IOL power before cataract surgery to put the IOL with the right capacity.
- Doctors should conduct more careful screening to eliminate causes that affect the outcome of surgery such as scar on the retina and DR.
- Conduct VA check for student or activity to recommend student to have their eyes checked in eye units after 6 months to 1 year because of their RE increasing.
- Due to the low quality of glasses bought by student's family, the Department of Health (DOH) should coordinate with the Eye Hospital / Eye Centre to check the quality of private optical shop, conduct training for them, and then provide a certificate to ensure the quality of service.¹¹

7.1.2. Equipment:

- Most equipment provided by the project is in good in use, labelled carefully with the donor logos and asset label, that helps to contribute in increasing the quality of treatment. However, the medium-minor surgery set provided to the hospital in Binh Tan District is lacking 4 pieces (Lacrimal Probes, Chalazion forceps, Chalazion Curette and Plate). These pieces need to be procured in the future.

- Tien Giang Province:

7.1.3. Child Eye Surgery:

- The refractive error of post-operated squint children should be corrected and vision recovering exercises should be provided to these children for ensuring a long term – efficient outcome.
- The surgery recording document should be full detailed with the level/capacity of squint before and after surgery.
- Fred Hollows Foundation should support the cost for further surgery of the remaining 9 cases (6 cases of squint and 3 cases of ptosis). This cost can be covered by the VNCEC project with is implementing in Tien Giang

7.1.4. Refractive Error:

- Conduct VA check for student or activity to recommend student to have their eyes checked in eye units after 6 months to 1 year because of their RE increasing.
- Due to the low quality of glasses bought by student's family, the Department of Health DOH should coordinate with the Eye Hospital / Eye Centre to check the quality of

¹¹ The Viet Nam Child Eye Care (VNCEC) project is working in Tien Giang Province while waiting for a quality standard for optical shops approved by the Ministry of Health over the coming years.

private optical shop, conduct training for them, and then provide a certificate to ensure the quality of service.

7.1.5. Equipment:

- In Tien Giang, 1 anesthesiologist should be recruited for using anesthesia apparatus and synoptophore more regularly. However, this may be difficult due to the limited budget of the Hospital. There is anaesthesia equipment supported by the project but it is used only during some months in the year. It is recommended to collaborate with the Doctors from the Provincial General Hospital to do regular surgeries for children and elderly patients.
- Tien Giang Department of Health should soon recruit the eye care staff for the Regional General Health Examination Clinic in Cai Lay District, or Cai Lay District Health Centre should be allocated a standard place for operation. This will improve the use of equipment.

• Lam Dong Province

7.1.6. Cataract Surgery:¹²

- In general, the quality of cataract surgery should be more improved. This can be explained that the surgeon has just practiced cataract surgery for four years but not frequently. Besides, trainers from Danang Eye Hospital are usually changed (3 trainers), and their surgery technique could be a little different that made difficulty for the trainees to acquire.

7.1.7. Refractive Error:

- The results of the evaluation clinical expert can be explained that there is more attention for eye care of children living in city than in rural areas. However, the quality of spectacles made by private shops need be paid more attention because the variance between the LD and the PD are still high.

7.1.8. Equipment:

- The District Eye Doctor should be refresher trained on conducting eye examinations with the slit lamp by the Provincial eye doctor.
- The District Eye Doctor should pay more attention to use or provide training to the Eye Nurse for using the trial lens efficiently.

• Dak Nong Province

7.1.9. Equipment:

- Schiotz tonometer has just been used by 1 doctor. The other doctors have been using Maclakov tonometer (Russian method). It is recommended that Schiotz tonometer should be used instead of Maclakov tonometer (Social Disease Prevention Centre).
- Most equipment provided by the project in Cu Jut district has not been used frequently over recent months because the Doctor has been taking a two-year training course to become an Eye Doctor level 1. The slit lamp's light is not working, and the reason has not been detected. The district hospital should pay attention to maintain these equipments

¹² National protocols for cataract surgery is being developed by the Ministry of Health and Vietnam National Institute of Ophthalmology with the support of the Fred Hollows Foundation.

7.1.10. Cataract Surgery:

- One eye of the youngest patient (61 ages) has the complication of posterior-capsular rupture. This patient should be RE corrected carefully to avoid unnecessary bad feedback from the patient (Cu Jut).

- Vinh Long, Tien Giang, Lam Dong and Dak Nong Provinces:

7.1.11. Monitoring of Clinical Treatment:

- The Project Management Board of all four Provinces should recruit a qualified eye care clinical expert who can monitor and advise on clinical practice (i.e. on visual acuity and cataract surgery) and give hands on training where needed. This should be done on a regular basis and at least every six months.

7.2. Sustaining and Integrating Project Achievements in the Government System (Phase II)

For the Project Management Board to prepare a proposal to the Fred Hollows Foundation and other donors in the direction of sustaining and integrating projects achievements within the government system. This should be seen as a second phase of this project, over a two to three year period (to be negotiated) that outlines distinct phases in sustainability and integration (i.e. showing how different elements of the program (I) Training, II) Facilities and Equipment, III) Clinical service delivery and communications and IV) Project management and partnership) will be resourced and managed within the government health system. Key elements of this proposal should include:

- Cost recovery: how costs, based on clinical, preventative and supporting service delivery are calculated and allocated from different funding sources (including: Provincial budget, health insurance, patient contribution, private sector, NGO and Church sponsorship and Mass Organisations support).

The Project Management Board should set up a 'Voucher' or 'Coupon' scheme to raise awareness on the costs of eye care health. For example, where it offers free surgery (through the funding of the project) it should give a coupon to the patient that shows the value of the surgery in Vietnam Dong. The patient can then fill in their personal identification details and give back to the Eye Department, while keeping a portion of the voucher. The idea of this method is to start showing patients that there is a cost to surgery and it is not in fact 'free'. This method could also be used for the provision of spectacles for poor school children.

Options to make the screening program and supply of spectacles sustainable include:

- The Eye Department/Hospital gaining authorisation to supply spectacles and thus assure quality and generate income through the sale of spectacles to cover its costs.
 - Income from 7% reimbursement/refund fund from student health insurance pool.
 - The School raising funds through private sector partnerships to sponsor eye screening events and spectacles.
 - The School raising funds through mobilising Mass Organisations and/or local and international NGOs/charities/foundations.
 - Parents of students contributing to the costs of screening and spectacles (and they have to do this when they purchase from private sector optical shops).
- Business and Marketing Plans: how quality assurance standards for all services and treatment will be created, implemented, monitored and developed; how the Outreach

Network will be maintained and sustained¹³; how the brand identity of eye care health and the eye institutions and departments involved will be marketed to build trust and assurance with communities, patients and staff across the Province and external stakeholders. (Note that branding refers to more than creating a corporate logo, but is built on quality services that meet and exceed the expectations of patients). This will ensure positive word of mouth messaging and build trust in eye care health across communities. The business and marketing plans should also be aligned closely with government regulations.

- Phase Out of Subsidies: outline steps over a given time period to phase out of receiving subsidies for screening, operations and free spectacles while phasing in other sustainable sources of cost recovery. This should include how the cataract screening and school screening in refractive error can be funded and sustained.
- Create Refractive Error Services: to address the low quality of spectacles provided by the private sector that is currently unregulated, develop in-house refractive error services to assure good quality screening and provision of spectacles for students across the province. This will involve negotiating with the Department of Health for the necessary certificate/s and to set up the requisite human resources and specialist refractive error equipment. A long term objective could be to create partnerships with the private sector to upgrade the quality of their services in optical shops.

School Health Personnel should set up a documented process for informing parents of the visual acuity of their children and prescriptions (rather than a verbal message to students). There should also be some form of return communication from the parents to inform the school what action they have/will take.¹⁴ The School will need to take into account that they will also need to explain eye care health to both the students and parents.

- Scale Up - Phase III: create a brief outline on how the achievements of the project, and further to the sustaining and integration plans, to scale up and replicate the project to other districts in the Province.

7.3. Human Resource Development

Create a **Human Resource Development Plan** across the Province that documents the training that eye care health staff have benefited from (last four years), conduct a current training needs assessment and plan for future training. This should identify which personnel need basic and intensive/advanced training (academic and hands on training) and how these will meet existing and emerging needs. This will support the Provincial, District and Commune eye care health institutions in capturing trends, identifying gaps, and making long term strategic human resource plans.

While the project had the opportunity for trainees to contact their trainer, and a template was issued to trainees, there could be more **proactive training follow up** from the Project Management Board or assigned personnel to check that learning is being applied and any follow up support given. This would also be an opportunity for staff to reflect on their learning and seek any further support.

¹³ A system to maintain and sustain the Outreach Network that has been established with Village Health Workers could involve organizing regular yearly refresher/induction training; an electronic communication system (mobile smart phones); experience sharing forums and fun contests; screening activities; and this is an opportunity for the Province to acknowledge the work of the Commune and Village Health Workers.

¹⁴ During the evaluation, one student said that her parents were too busy to take her to the optical shop even though she had informed them many times. However, they finally bought the spectacles. In another case a parent was angry with her child and asked why she had made a problem with her eyes.

There should be more **technical support and coaching from Province to District** level and further collaboration between Province and District to strengthen District based eye care services for improved accessibility among local populations, especially the poor, elderly and children. Furthermore, the training of Village Health Workers should be delegated from the Province to the District level to support closer relationships between District and Village and long term training sustainability.

7.4. Patient Peer to Peer Learning and Forums

Organise **Patient Peer to Peer Learning** (prospective and actual patients) so that they can share their experiences of cataract surgery and help others to understand what is involved and the benefits. This could be done where possible in person (i.e. where patients are in the same village) or via mobile phone technology (via Skype) to with people in different and/or remote locations. This would build on inter-personal verbal communication that is a popular and powerful mode of communication in villages and rural areas.

Create **Patient Forums**¹⁵ (and this could be linked up with screening campaigns) with patients, Village Health Workers, Doctors and Nurses to share experiences and results and raise awareness on cataract eye surgery. At outreach screening, patients could be invited to come for follow up and also to share their experience with others who are considering surgery.

7.5. Eye Care Health Ambassadors

For the Project Management Board in coordination with its collaborating partners to set up Eye Care Health Ambassadors on a volunteer basis to promote eye care health in the Province. This could be done at a range of levels, including:

- Provincial and District – a well-known and respected government official, private sector businessman/entrepreneur (who doesn't have a vested interest in eye care health) and/or media specialist to promote eye care health. They could contribute their perspectives to selected Project Management Board meetings where there are relevant topics for discussion (and this might include fund raising and marketing strategies). If there were a group of ambassadors these could act like an advisory board on outreach and communication topics.
- Students at Schools – For the Schools to consider nominating a student (or a team of students across each year group) to promote screening and good practice at the school. This would give the opportunity for the School Health Personnel to discuss screening plans and seek inputs and support from the students.

7.6. Training Materials

Produce a **Guide to Primary Eye Care Health**¹⁶ (publication, with back up on a website or application for a mobile smart phone) that has the key information and supporting visuals and diagrams to support Village Health Workers in advising patients. This could be used by Village Health Workers for induction and to refresh learning from time to time. An electronic version would give the opportunity for regular updates. This should take in to account that when the Village Health Worker is talking with the patient they need large pictures, diagrams and supporting information to help the patient to understand more clearly about the surgery and weigh up the pros and cons in having a cataract operation.

¹⁵ While project partners have combined the eye screening with eye education group discussion, in which one or two post-cataract patients are invited to share their experiences this recommendation suggests that this could be made more explicit and higher priority.

¹⁶ VNIO is currently working on a similar guide and there is potential for collaboration to avoid duplication.

If there is further role out of training to other districts, fine tune the methodology to more closely meet the local culture of trainees in line with the needs of commune and district staff. **Translate training materials to local languages** to help farmers and villagers understand the eye message in a local way and thus better understood. Role play in workshops in local languages would make it more real and help trainees to relate to the situation.

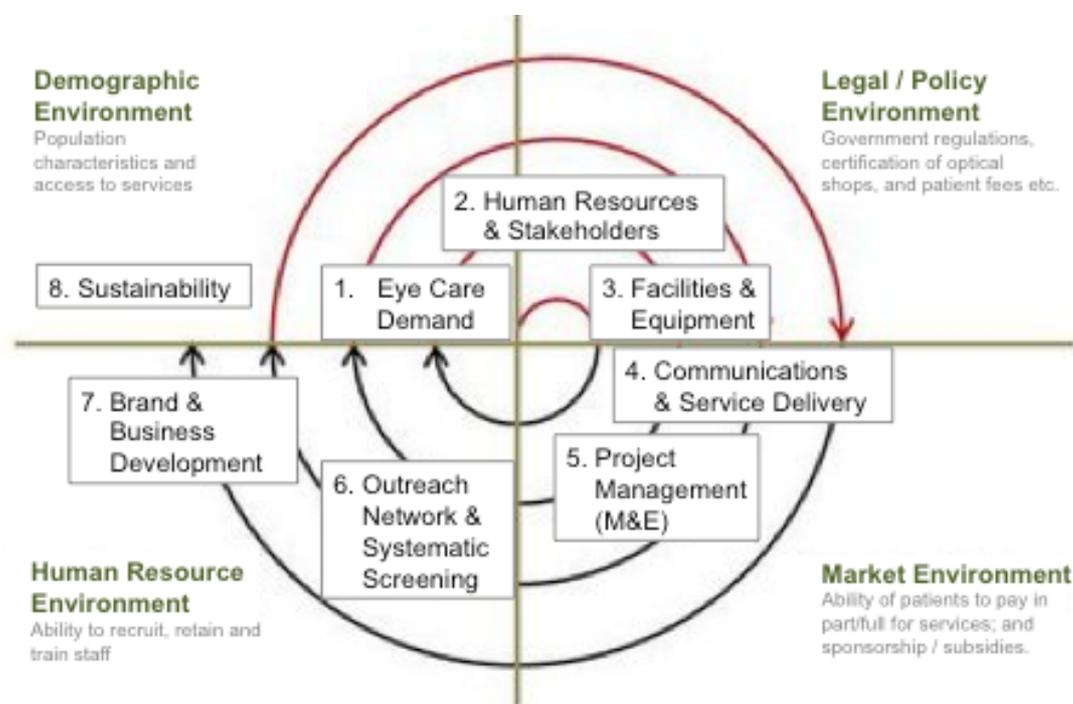
7.7. Comprehensive Eye Care Change Model

For Fred Hollows Foundation with its project partners from the four Provinces and other interested stakeholders to reflect on the Vietnam Comprehensive Eye Care Development Project model and develop further based on the practical experiences over the last four years and in light of the emerging trends in Vietnam. The model could be strengthened by building on the four project components: Human resources, Facilities and equipment, Communications and service delivery and Project management (including monitoring and evaluation).

A draft change model (shown below) outlines the addition of two critical components: setting up systematic and regular screening; and developing a quality brand and business planning that includes cost recovery. The model also shows four environmental contextual factors that need to be taken into account: Demographic, Legal/policy, Market, and Human Resources – as these will have a critical bearing on the opportunities and constraints for eye care services.

This change model could be used as a process to help project partners articulate and make explicit the assumptions about how the pathway will lead to the desired change – to reduce avoidable blindness and visual impairment. It can also be linked to a set of quality standards for each of the seven steps that lead to sustainability. A log frame can then be developed which outlines objectives for each of the steps along with the analysis of the four environmental contextual factors.

Diagram: Comprehensive Eye Care Change Model



Annex I: Consultations with Stakeholders

I. Vinh Long Province

- Project Management Board (PMB), Social Disease Prevention Centre (SDPC), Vinh Long, 31-Oct-16
 - Dr Nguyen Ngoc Tuan, Vice-Director and Project Secretary, PMB and SDPC
 - Dr Pham Minh Thanh, Director of the PMB and SDPC
 - Dr Le Minh Phuong, Chief of the Eye Department, SDPC
 - Ms Pham Thanh Loan, Project Accountant, PMB and SDPC
- Social Disease Prevention Centre, Vinh Long, 31-Oct-16
 - Dr Nguyen Hoang Liem, Basic Eye Doctor (previous project training and TOT training this project)
 - Ms Le Diem Thuy Huyen, Eye Nurse (training)
- Patients (cataract) of Social Disease Prevention Centre, Vinh Long, 01-Nov-16
 - Ms Ho Thanh Kieu, Tam Binh District (71 years)
 - Mr Pham Van Man, Vinh Long City (63 years)
- Binh Tan District General Hospital, 01-Nov-16
 - Dr Nguyen Huu Phuoc, Director
 - Dr Nguyen Thanh Sang, Eye Doctor
 - Dr Nguyen Anh Dung, Vice-Director of the District Health Centre
- Binh Tan District General Hospital, 01-Nov-16
 - Ms Le Thi Nguyet, Thanh Vinh village
 - Ms Le Thi Phuoc Huu, Thanh Tam village
 - Ms Nguyen Thi Ha, Thanh Cong village
- Thanh Dong Secondary School (1,400 students), Binh Tan District, 01-Nov-16
 - Ms Nguyen Thi Tiep, Vice-Principal
 - Ms Phung Pham Kieu Diem Xuan, District Education Centre
 - Ms Nguyen Thi To Nga, School Health Personnel
 - 4 students (2 x 14 years and 2 x 11 years)
- Patients (cataract), 01-Nov-16
 - Mr Pham Thang Long (76 years)
 - Ms Nguyen Ngoc Phuong, (69 years)
- Nguyen Van Thu General Hospital, Vung Liem district, 02-Nov-16
 - Dr Nguyen Van Khai, Director, District General Hospital
 - Dr Le Thanh Phuoc, Basic Eye Doctor, Eye Department, District General Hospital
 - Ms Phan Thi Vuong, Eye Nurse, Eye Department, District General Hospital
- Vung Liem District Health Centre, 02-Nov-16
 - Dr Le Thi Kien Trinh, Vuy Liem District Health Centre
 - Dr Le Van Tu, Head of Health Station, Trung Thanh Commune
 - Ms Tran Thi Ngoc Lan, Village Health Worker, Xuan Loc Village, Trung Thanh Commune
 - Ms Ngo Nhat Hoang My, Village Health Worker, Trung Hoa 2, Trung An Commune
 - Ms Thai Thi Hanh, Village Health Worker, Phong Thoi Village, Vuy Liem Town

II. Tien Giang Province

- Tien Giang Eye Hospital, 02-Nov-16
 - Dr. Nguyen Hung Vi, vice-director of Provincial Department of Health
 - Dr Pham Van So, Director
 - Dr Tran Viet Tuan, Vice-Director and Secretary
 - Ms Pham Thanh Truc, Project Accountant
 - Mr Nguyen Van Day, Refractionist and Technician of Equipment
 - Dr Pham Si Dong, Chief of Planning Department of Provincial Department of Health
- Dr Bui Ngoc Minh Tu, eye doctor, trained on Ptosis
- Dr Bui Thi Hanh Dao, trained on BED
- Dr Vo Tran Dang Khoa, trained on BED
- Ms Pham Thi Xuan Tho, trained on refractionist.
- Ms Le Thi Xuan Thanh, trained on eye nurse

- Tan Phuoc District Health Centre, 03-Nov-16
 - Dr Tam, Vice-Director
 - Mr Dong, District Peoples Committee
 - Dr Nguyen Thi Trinh, Basic Eye Doctor and Chief of Eye Department
 - Ms Mai Thi Thuy Duong, Eye Nurse
- My Phuoc Secondary School, Than Phuoc District, 03-Nov-16
 - Ms Tran Thi Thu Thao, School Health Personnel
 - Mr Nguyen Van Sang, Vice-Principal
- Commune Health Station, My Phuoc Town, Than Phuoc District, 03-Nov-16
 - Mr Tran Van Ut, Chief of Commune Health Station
 - Mr Tran Van Hai, Village Health Worker, No. 1 village
 - Ms Vo Thi Tuyen, Village Health Worker, No. 2 village
 - Ms Nguyen Thi Suong, Village Health Worker, No. 4 village
- Cai Lay District Health Centre, 03-Nov-16
 - Dr Mai Van Mai, Vice-Director
 - Mr Phan Van Cuong, Eye Nurse
 - Dr Le Van Chan, Basic Eye Doctor
- Phu Nhuan Secondary School, 03-Nov-16
 - Ms Nguyen Thi Xuan Thinh, Principal
 - Mr Nguyen Thanh Cao, School Health Personnel
 - Mr Nguyen Van Phuoc, School Health Personnel, Doan Thi Nghiep School
 - Ms Dang Thi Thuy Hien, School Health Personnel, Phu Nhuan school
- Cho Gao District Health Centre, 04-Nov-16
 - Dr Vo Kim Thuy, Basic Eye Doctor
 - Dr Nguyen Van Be, Director
 - Dr Vo Thi Kim Thuy, Vice-Director
 - Dr Vo Phuoc Hai, Basic Eye Doctor (hand-on training on minor surgery)
 - Mr Tran Huy Thang, Refractionist
 - Mr Truong Trong Chuong, Eye Nurse
 - Ms Nguyen Thi Thu, Eye Nurse

III. Lam Dong Province

- Lam Dong Social Disease Prevention Centre, Da Lat, 07-Nov-16
 - Dr Nguyen Quoc Minh, Director
 - Dr Pham Thi Hanh, Cataract Surgeon
 - Dr Kieu, Head of Planning Department
 - Dr Nguyen Thi Hien, Head of Eye Department
- Phan Chu Trinh Secondary School, (1,800 students), Da Lat, 07-Nov-16
 - Ms Truong Thi Vinh, Vice-Principal
 - Ms Huynh Thi Nhieu, School Health Personnel
 - Ms Tuyet Minh, Administrative Officer
- Patients (cataract), 07-Nov-16
 - Ms Nguyen Thi Nga, (85 years), Da Lat
 - Ms To Thi On (80 years), Da Lat
- Phan Chu Trinh Secondary School, (1,900 students), Da Lat, 08-Nov-16
 - Students:
 - Ms Tran Nguyen Thao Nguyen (14 years)
 - Ms Ho Binh Tram Anh (14 years)
 - Ms Mai Nguyet Anh (14 years)
 - Mr Vo Hoang Phuc (14 years)
 - Mr Nguyen Hun Manh (14 years)
 - Ms Truong Ngoc Bao Khanh (14 years)
 - Ms Nguyen Diep Thoai Vy (14 years)
 - Ms Nguyen Ngoc Thien Anh (14 years)
 - Mr Tran Tien (14 years)

- Mr Luu Dac Ha Thanh (14 years)
- Ms Le Nguyen Yen Nhi (14 years)
- Tu Ta Commune Health Station, Don Duong District, 08-Nov-16
 - Patients (cataract)
 - Mr Pham Van Sinh (86 years)
 - Ms Nguyen Thi Sec (80 years)
 - Ms Ngo Thi Diep (78 years)
 - Ms Nguyen Thi Lan (84 years)
 - Ms Than Thi Thin (77 years)
 - Mr Nguyen Viet Cu (78 years)
 - Ms Ngo Thi Huyen Trang, Village Health Worker
 - Ms Touneh Nai Nguyen, Village Health Worker
 - Dr Toureh Nhat, Chief of Commune Health Station
- Don Duong Health Centre, 08-Nov-16
 - Dr Nguyen Thi Nhu Ly
 - Ms Pham Le Phuong Thao
 - Dr Le Thi Hong, Basic Eye Doctor
 - Ms Nguyen Thi Cam Tu, Ophthalmic Nurse
- Thanh My Secondary School (1,020 students), 08-Nov-16
 - Ms Dang Thi Hoa, Principal
 - Ms Nguyen Thuy Van, School Health Personnel
 - Students:
 - Ms Le Gia Han (11 years)
 - Ms Thai Thi Thao Tien (11 years)
 - Ms Duong Tran Bao Quy, (11 years)
 - Ms Roda Nai Chuc (11 years)
 - Ms Le Duc Tuan Anh (11 years)
- Di Linh District Health Centre, 09-Nov-16
 - K'Be Dakrong, Director
 - Tran Ngoc Van, Basic Eye Doctor
 - K'Brep, Basic Eye Doctor
 - Le Van Thinh, Eye Nurse
- Bao Thuan Commune Health Centre, 09-Nov-16
 - Patients (cataract):
 - Ms Ka Deu (74 years)
 - Ms Ka Treh (90 years)
 - Ms Ka Treo (73 years)
 - Mr Ka Bron (91 years)
 - Ms Ka Deh (82 years)
 - Ms Ka Hon (93 years)
 - Ms Ka Hien, Village Health Worker
 - Ms Ka Hau, Village Health Worker
 - Mr Nguyen Van Cong, Village Health Worker
 - Mr K'Breo, Paramedic, Chief of Commune Health Station

IV Dak Nong Province

- Dak Nong Social Disease Prevention Centre, Dak Nong Province, 10-Nov-16
 - Dr Le Dinh Thu, Director
 - Dr Tran Binh Minh, Provincial Department of Health (former Director, PCSD)
 - Ms Nguyen Thi Hoai, Secretary of Project
 - Project Team members
 - Dr Tran Le Quang, Basic Eye Doctor
 - Dr Dong Trung Kien, Basic Eye Doctor
 - Mr Nguyen Van Quyen, Refractionist
 - Ms Nguyen Thi Thanh Thuy, Eye Nurse and Refractionist

- Dak Lap General Hospital, 11-Nov-16
 - Dr Pham Thanh Tung, Director
 - Dr Thuy, Vice-Directo
 - Dr Diep, Basic Eye Doctor
 - Mr Tuan, District Health Centre
 - Ms Tam, Commune Health Worker
 - Ms Nguyen Thi Min, Village Health Worker
 - Ms Nguyen Thi Oanh, Village Health Worker

 - Patients (cataract):
 - Ms Dang Thi Chau (73 years)
 - Mr Cao Van Liem (76 years)
 - Mr Ha Van Nghia (79 years)
 - Mr Vu Van Chuc, (59 years)
 - Ms Le Thi Hien (61 years)

- Cu Jut District Hospital, 11-Nov-16
 - Dr Bui Thi Minh Nghia, Director
 - Dr Phan Thanh Tinh, Former Director
 - Dr Nguyen Thi Thanh, Vice-Director
 - Ms Hoang Thi Thuy Linh, Commune Health Worker
 - Ms Nguyen Thi Phuong, Village Health Worker
 - Mr Le Huu Phuoc, Village Health Worker
 - Ms. Nguyen Thi Ly, Village Health Worker

Annex II: Equipment Supplied to Provinces

No	Description in English	Year	Quantitative	Unit price	Total value (US\$)
Vinh Long Province					38,081
1	Social Diseases Prevention Centre				36,461
1	Digital Retinography System – Fully automated Fundys Camera	2016	1	16,116	16,116.04
2	Cataract surgical set, 9 items, Rumex, USA	2015	2	1,480	2,959
3	Ophthalmoscope, Model: Beta 200, Heine/ Germany	2015	1	575	575
4	Chopper, 7-063, Rumex, USA	2015	2	122	244
5	Minor-medium surgical set, 13 items, Appasamy/India	2015	1	650	650
6	Simcoe I/A cannul, 23/23G, 15-129-0.3, Appasamy, India	2015	2	75	150
7	Ophthalmoscopy - ARCLIGHT (provided by FHF Sydney office)	2014	2	-	-
8	Ophthalmoscope with large battery	2014	2	548	1,097
9	Portable operation microscope	2014	1	4,375	4,375
10	Auto Haematology Analyzer , Nihon Kohden, Japan	2014	1	10,226	10,226
11	Headwear magnifier- Vietnam	2014	2	16	33
12	Minor operation light	2014	1	36	36
2	District				1,620
1	Binh Tan				400
1	Trial lens set, Medop/ China	2015	1	380	380
2	Headwear magnifier, Vietnam	2015	1	20	20
2	Vung Liem				1,220
1	Minor-medium surgical set, 13 items	2014	1	437	437
2	Ophthalmoscope with large battery	2014	1	545	545
3	Trial lens set	2014	1	238	238
1	Tien Giang province				86,088
1	Tien Giang Eye Hospital				71,138
1	Synoptophore, Model: L-2510HB, Inami, Japan. Stand automatically operated by energy motor	2015	1	6,399	6,399
2	Intubation Lights (for adult)	2014	1	305	305
3	Intubation Lights (for childrent)	2014	1	305	305
4	Vaporizer SEVOFLURANE	2014	1	3,695	3,695
5	Laptop Dell INPRISION 3542	2014	1	632	632
6	order - automatic machine	2014	1	189	189
7	STT control machine and case	2014	1	189	189
8	Ambulance car	2014	1	28,586	28,586
9	Monitor tracking patient, iPM10, Mindray, China	2013	1	3,876	3,876
10	Anaesthetic machine DRAGER FABIUS PLUS, Germany	2013	1	26,962	26,962
2	District				14,950
1	Cai Lay				5,273
1	Minor surgical set - 13 item	2014	1	437	437
2	Ophthalmoscope with large battery	2014	1	545	545

3	Slit lamp	2014	1	4,002	4,002
4	Tonometer	2014	1	149	149
5	VA chart	2014	1	23	23
6	Minor operation light	2014	1	36	36
7	Headwear magnifier, Vietnam	2014	1	17	17
8	Minor operation table	2014	1	64	64
2	Cho Gao				4,711
1	Minor surgical set - 13 item	2014	1	437	437
2	Slit lamp	2014	1	4,002	4,002
3	Tonometer	2014	1	149	149
4	VA chart	2014	1	23	23
5	Minor operation light	2014	1	36	36
6	Minor operation table	2014	1	64	64
3	Tan Phuoc				4,966
1	Minor surgical set - 13 item	2014	1	437	437
2	Slit lamp	2014	1	4002	4,002
3	Tonometer	2014	1	149	149
4	Trial lens set	2014	1	238	238
5	VA chart	2014	1	23	23
6	Headwear magnifier, Vietnam	2014	1	17	17
7	Minor operation table	2014	1	64	64
8	Minor operation light	2014	1	36	36
	Lam Dong Province				81,879
	Social Diseases Prevention Centre				69,554
1	Autoclave, SA 232X, Sturdy, Taiwan	2015	1	985	985
2	Auto-refractometer	2014	1	6,479	6,479
3	handy lens power machine	2014	1	301	301
4	Operation microscope	2014	1	4,375	4,375
5	VA chart,ETDRS, Vietnam	2014	40	23	920
6	Centering Device	2014	1	200	200
7	Auto groover	2014	1	240	240
8	Automatic Lens Edger	2014	1	2,226	2,226
9	90D lens .Gonio Len. OISTDm. Ocular/ USA	2014	1	240	240
10	Patient bed	2014	5	123	615
11	Bedside cabinet	2014	5	44	220
12	Medicine chest and instrument	2014	1	149	149
13	3 mirrors glass	2014	1	320	320
14	A scanner Pacscan 300 AP, Sonomed, USA	2013	1	4,630	4,630
15	Auto-keratometer, model SO-21 Shin Nippon, Japan	2013	1	3,400	3,400
16	Autoclave, SA 450, Sturdy, Taiwan	2013	1	6,495	6,495
17	Cataract surgical set, 15 items and case, Rumex, USA	2013	3	2,200	6,600
18	Ophthalmoscope, Beta 200 , Germany	2013	1	755	755
19	Operation microscope , - Portable, Inami L-0940SD, Japan	2013	1	5,107	5,107

20	Operation microscope - Standing, Inami L-0940SD, Japan	2013	1	6,226	6,226
21	Slitlamp - Model: L-0185, Branch: INAMI-Nhật Bản	2013	1	3,985	3,985
22	Trial lens set, K-350, Inami, Nhật	2013	1	1,378	1,378
23	VA lamp chart - Vietnam E chart, Inox, have light	2013	3	23	69
24	Pterygium surgical set, 7 items, Rumex, USA	2013	2	843	1,686
25	Minor surgical set - 13 item Medelec, India	2013	1	455	455
26	Trial frame - K-0391, Inami - Nhật	2013	1	215	215
27	Hand washing machine - Mactic II, Jiwon, Korea	2013	1	8,127	8,127
28	Skiascope -Ri-scope L-3782/ medium battery, Germany	2013	1	340	340
29	Headwear magnifier - Medeled, India	2013	1	26	26
30	Ophthalmic operating table, 9042, Otpotex OT, India	2013	1	2,790	2,790
2	District				12,325
1	Da Teh				1,732
1	Stye surgical set	2014	1	193	193
2	Ophthalmoscope, Beta 200, Germany	2013	1	755	755
3	Trial lens set, India	2013	1	240	240
4	VA lamp chart, Vietnam E chart, Inox, light	2013	1	23	23
5	Minor surgical set, 13 item: Branch: Medelec - India	2013	1	455	455
6	Minor surgery lamp, Model: Medelec Branch: Vietnam	2013	1	40	40
7	Headwear magnifier - Medeled, India	2013	1	26	26
2	Di Linh				4,919
1	Slitlamp - Model: L-0185, Branch: INAMI-Japan	2013	1	3,985	3,985
2	Tonometer- Model: Chiotz C, Series : 5114 Branch: Rudolf Riester GmbH & Co KG, Germany	2013	1	150	150
3	Trial lens set, India	2013	1	240	240
4	VA lamp chart, Vietnam E chart, Inox, having light	2013	1	23	23
5	Minor surgical set, 13 item: Branch: Medelec - India	2013	1	455	455
6	Minor surgery lamp, Model: Medelec Branch: Vietnam	2013	1	40	40
7	Headwear magnifier - Medeled, India	2013	1	26	26
3	Don Duong				5,674
1	Ophthalmoscope, Beta 200, Germany	2013	1	755	755
2	Slit lamp - L0185, Inami, Japan	2013	1	3,985	3,985
3	Tonometer- Model: Chiotz C, Series : 5114 Branch: Rudolf Riester GmbH & Co KG, Germany	2013	1	150	150
4	Trial lens set	2013	1	240	240
5	VA lamp chart, Vietnam E chart, Inox, light	2013	1	23	23
6	Minor surgical set, 13 item: Branch: Medelec - India	2013	1	455	455
7	Headwear magnifier - Medeled, India	2013	1	26	26
8	Minor surgery lamp, Model: Medelec Branch: Vietnam	2013	1	40	40
	Dak Nong Province				76,597

1	Social Disease Preventive Centre				63,616
1	Cataract surgical set, 15 items, Rumex, CE, ISO 9001	2015	2	1,900	3,800
2	Ophthalmoscope with large battery, Model: Beta 200, Heine/ Germany	2015	1	575	575
3	Skiascope Model: Beta 200 Streak, Heine, Germany	2015	1	690	690
4	Tonometer, Vietnam	2015	1	56	56
5	Pterygium surgical set, Rumex, USA	2015	1	839	839
6	Headwear magnifier, Vietnam	2015	2	20	40
7	13 items, Minor Surgery Set, Rumex, USA	2015	2	845	1,690
8	5m ETDRS VA lamp chart, Vietnam	2014	71	23	1,633
9	Surgical item carriage, Inox, Vietnam, height 0,8 m x length 0,8 m x wide 0,6 m	2014	2	94	188
10	Chair, Inox, Vietnam	2014	2	37	74
11	Salin stand, Inox, Vietnam, height 2,2 m	2014	2	24	48
12	Instrument cabinet, Inox, Vietnam, height 1,7 m length 1,2 m x wide 0,4 m	2014	1	274	274
13	Medical cabinet, Inox, Vietnam	2014	1	284	284
14	Stainless Steel Hospital Medical Instrument Cart, Inox, Vietnam, height 1,2 m x length 1,5 m x wide 0,8 m	2014	1	212	212
15	A-B Ultrasound scanner EZ 5500+B, Sonomed, USA	2013	1	16,800	16,800
16	Auto-keratometer, model SO-21 Shin Nippon, Japan	2013	1	3,400	3,400
17	Autoclave, SA 232, Sturdy, Taiwan	2013	1	794	794
18	Autoclave, SA 450, Sturdy, Taiwan	2013	1	6,495	6,495
19	Cataract surgical set, 15 items and case, , Rumex, USA	2013	2	2,200	4,400
20	Ophthalmoscope Beta 200, Hein, Germany	2013	1	539	539
21	Operation microscope , SO-111T, Scanoptics, Australia	2013	1	5,248	5,248
22	Tonometer - Schiötz 5113, Riesrer - Germany	2013	1	235	235
23	Trial lens set K-350, Inami, Nhật	2013	1	1,378	1,378
24	VA chart Landolt, inox, C Landolt - Vietnam	2013	4	23	92
25	Pterygium surgical set, 7 items, Rumex , USA	2013	1	843	843
26	Minor surgical set - 13 items, Rumex/ USA	2013	1	1,240	1,240
27	Volk lens + Superfield VSFNC , USA	2013	1	360	360
28	Skiascope -Ri-scope L-3782/ medium battery, Germany	2013	1	340	340
29	Headwear magnifier - Medeled, India	2013	2	26	52
30	Minor surgery lamp, Model: Medelec Branch: Vietnam	2013	2	40	80
31	Hand washing machine - Mactic II, Jiwon, Korea	2013	1	8,127	8,127
32	Ophthalmic operating table, 9042, Otpotex OT, India	2013	1	2,790	2,790
2	District				12,981
1	Cu Jut				6,344
1	Autoclave, SA 232 16lits, Taiwan	2014	1	675	675
2	Slit lamp, L0185, Inami, Japan	2014	1	3,692	3,692
3	Ophthalmoscope, BETA 200, HEIN-Germany	2013	1	539	539
4	Tonometer - Model: Chiotz C, Series : 5114	2013	1	150	150

	Branch: Rudolf Riester GmbH & Co KG, Germany				
5	Trial lens set, India	2013	1	240	240
6	VA lamp chart, Vietnam - E chart, Inox, have light	2013	2	23	46
7	Minor surgical set, 13 item: Medeled- India	2013	2	455	910
8	Minor surgery lamp, Model: Medelec, Vietnam	2013	1	40	40
9	Headwear magnifier - Medeled, India	2013	2	26	52
2	Dak Lap				6,637
1	Autoclave, SA 232 16lits, Taiwan	2014	1	675	675
2	Ophthalmoscope, BETA 200, HEIN-Germany	2013	1	539	539
3	Slit lamp, L0185, Inami, Japan	2013	1	3,985	3,985
4	Tonometer- Model: Chiotz C, Series : 5114 Branch: Rudolf Riester GmbH & Co KG, Germany	2013	1	150	150
5	Trial lens set, India	2013	1	240	240
6	VA lamp chart, Vietnam - E chart, Inox, have light	2013	2	23	46
7	Minor surgery lamp, Model: Medelec, Branch: Vietnam	2013	1	40	40
8	Headwear magnifier - Medeled, India	2013	2	26	52
9	Minor surgical set, 13 item, Branch: Medelec - India	2013	2	455	910