

The Fred Hollows Foundation China Program

Seeing is Believing – Phase IV

**Development of Essential Eye Care Services in Gansu Province,
Inner-Mongolia Autonomous Region and Jiangxi Provinces, China**

Final Evaluation Report

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15 August 2013

Acknowledgement

The heartfelt appreciation goes to the Fred Hollows Foundation China Program, Inner Mongolia Red Cross Chaoju Eye Hospital and Lanzhou Bright Eye Hospital for their excellent logistic preparation.

The deepest appreciation goes to all participants who kindly spent time for the interviews. The evaluation would not be possibly completed without their openness and honesty of sharing their thoughts.

Acronyms

APA: Annual Partnership Agreement

BOH: Bureau of Health

CSOM: Cataract Surgical Outcome Monitoring

DPF: Disabled Persons' Federation

EENT: Eyes, Ears, Nose and Throat Department

FGD: Focus Group Discussion

HCW: Health Care Worker

IMREH: Inner Mongolia Red Cross Chaoju Eye Hospital

IOL: Intraocular lens

LZBEH: Lanzhou Bright Eye Hospital

SICS: Small Incision Cataract Surgery

NRCMS: New Rural Cooperative Medical Scheme

RE: Refractive Error

SCB: Standard Chartered Bank

SIB IV: Seeing is Believing Phase IV

TOT: Training of Trainer

URMI: Urban Resident Medical Insurance

VC: Vision Center (or optometry Center)

WSD: World Sight Day

Table of Contents

Contents	Page
Executive Summary	6
1. Introduction	10
1.1 Background	10
1.2 Purpose and scopes	11
1.3 Methods and limitations	11
1.4 Field work	12
1.5 Questionnaire survey and group consultation	14
2. Findings	15
2.1 Implementation and results	15
2.2 Service of SICS	18
2.3 Outcomes and impacts of the county hospitals	20
2.4 Outcomes and impacts of IMREH and LZBEH	24
2.5 Capacity building activities	26
2.6 Ability of SICS	27
2.7 Vision Centers	30
2.8 Procurement and maintenance of the equipments	33
2.9 Information, education and communication	33
2.10 Partnership among private and public hospitals	35
2.11 Design and implementation of the project	37
2.12 Management of the project	38
2.13 Sustainability of the project	39
3. Conclusions	41
4. Recommendations	42
List of Annexes	
Annex 1: Questionnaires	44
Annex 2: List of the Documentation Reviewed	48
Annex 3: Schedule	49
Annex 4: List of the Interviewees	52
Annex 5: Album (Attached as a separate file)	

List of Figures and Tables

Titles	Page
Figure 1: Map of the project provinces	10
Figure 2: Pie Charts of the interviewees by different natures	13
Figure 3: History of the project	15
Figure 4: Impact of the project to the county hospitals	20
Figure 5: Growing trends of optometric services in each VC	31
Figure 6: Framework of the project	37
Table 1: Number of medical records reviewed	14
Table 2: Number of the questionnaires collected	14
Table 3: Key outputs and outcomes by the end of July 2013	16
Table 4: Increment of eye care professions in the county hospitals in 2010 and 2013	21
Table 5: Input of equipments in the county hospitals	22
Table 6: Result of CSOM form analysis	29
Table 7: Outcome of cataract surgery in the project hospitals	29
Table 8: Income and expense of the VCs	31
Table 9: Feasibility of sustainable activities	40

Executive Summary

We were invited by Fred Hollows Foundation China Program (FHF) to conduct final evaluation of its project titled “Seeing is Believing IV” (SIB) between May and July 2013. This 3-year project was funded by Standard Chartered Bank (SCB) aiming to strengthen the delivery of high-quality, affordable, accessible eye care services focusing on cataract, refractive error (RE) and childhood blindness prevention for underserved communities across 9 prefectures/counties in Gansu Province (Gansu), Inner Mongolia Autonomous Region (Inner Mongolia) and Jiangxi Province (Jiangxi). The project is expected to achieve the following objectives:

- To increase the number and strengthen the capacity of eye care personnel in existing health systems in Gansu, Inner Mongolia and Jiangxi;
- To improve the availability of eye health services in project areas through the establishment of vision centers and provision of essential equipment for screening, treatment and training;
- To improve awareness of, and access to, eye care services for underserved communities in the project areas;
- To undertake research and implement quality monitoring systems to inform project activities, determine project impact and develop future eye care plans;
- To strengthen the capacity of rural eye health services providers, local government and local bureau of health in the project areas to effectively plan and coordinate prevention of blindness activities.

The final evaluation looks at the project results against project goals and objectives in consideration of the outcomes and outputs set in the project plan, and document lessons learnt, challenges and recommend any necessary improvement that should be incorporated into the FHF’s future projects. The methods employed in this evaluation include document review, questionnaire survey, semi-structured in-depth interview, focus group discussion, observation, group consultation, observation of live surgeries and review of medical records. The field visit was conducted between May 31st and 9th July 2013. We visited 15 institutes, interviewed 67 persons, observed 4 live surgeries and reviewed 85 medical records. In addition, 50 copies of questionnaires were collected and a consultation with a group of 37 participants was conducted.

We had the following findings:

1. The project implemented planned activities and accomplished following quantitative targets successfully: 190 medical professionals trained, 2,556 community health workers trained, 9,716 cataract surgery performed, 143,482 persons screened and 37,295 refractive errors corrected.
2. People living in the project areas enjoys easier access to better services of SICS free of charge or at lower cost.

3. All county hospitals' competencies of delivering services of cataract surgery and RE treatment increased enormously. Their reputation increased, source of patients expanded and ENNT developed to different extent.
4. Comprehensive ability and profile of IMREH and LZBEH increased.
5. The capacity building trainings of the project were generally effective although some training were not well tailored for individual trainees at the beginning.
6. The ability of SICS of project hospitals developed to different extent. Levels of services vary in different regions and there is still room to improve.
7. The vision centers operate smoothly with growing volume and income but qualities of service need to be improved. Their further developments face both opportunities and challenges.
8. The project invested 3.9 million Yuan of equipments and consumables to the project hospitals. Majority of the equipments and instruments are in good condition and used frequently
9. Some activities of information, education and communication (IEC) conducted but effectiveness was not impressive.
10. The project piloted new model of partnership which bring in private hospitals as technical supporters and coordinators of management. It is the first attempt in China.
11. The project was designed rationally and the framework was clear. The strategies and activities interlinked and in line with the objectives. However, local various realities were not took into consideration when the project set the targets in the beginning. The intension of interrelationships among strategies did not draw enough emphasis during the implementation.
12. Management of the project is formal, flexible and functional but facing many difficulties.
13. Sustainability of the project is optimistic.

We made the following conclusions:

1. The project successfully implemented and gained win-win results among different stakeholders. The mission of the project is well received by the partner hospitals. People in these regions enjoy easier access to affordable quality cataract surgery, RE treatment and information of eye care. The project hospitals have built up their eye departments for long term development. Many local individual professionals and leaders improved their awareness and professionalism.
2. The following factors contribute to achievements of the project:
 - Contributes to local government-led efforts.
 - Hospital-based hands-on training
 - A group of skillful master-trainers who were trained by FHF in previous project
 - Commitments of key leaders of the hospitals
 - Motivated ENNT/Eye departments
 - Strict and flexible management of the project
 - Flexible procurement of equipment
 - Timely and effective communication

- Commitment of improve eye care capacity and serve local communities
3. The following factors limit achievements of the project:
- Lack of transparent and competitive incentives mechanism in partner hospitals to motivate staffs.
 - Competition among provincial project coordinator-hospitals and county hospitals before the project.
 - Understaffed ENNT/Eye departments
 - Lack of enough efforts to management of the project in partner hospitals
 - Lack of participation of stakeholders from county hospitals in the planning
 - Risk of brain drain.

The recommendations include:

1. A comprehensive assessment need to be conducted in every project sites before making decision. It is important to involve suggestions of potential partners in the process of planning. It is also necessary to set up key criteria of potential sites according to expected outcomes of the project.
2. Try best to find leverage of mobilizing resources. For instance, project hospitals can apply for innovation scheme of government to promoting outcomes of the project.
3. Design strategies and activities of advocacy.
4. Emphasize project management, pay special attention to following aspects:
 - Communication and negotiation among project hospitals in all level should always be addressed
 - Makes commonly agreed structure and procedures of project management clear for all project hospitals, and keeps flexibility for review and adjustment.
 - Plan of implementation should be developed by all project hospitals, or finalized based on their suggestions.
 - Project activities should be integrated to project hospitals' routine work.
 - It is favorable to have a full time project coordinator of each of project hospitals. If not, project hospitals need to consider rearranging their workload. Project coordinators of hospitals' input to project should be counted as part of their performance.
 - FHF may consider providing some cost of project management in county hospitals, such as computer and internet. The portion of such supports should be reduced gradually to avoid dependency.
 - Project coordinator of hospitals requests basic knowledge and skills of using computer and internet.
 - Simplify procedures of management as much as possible. Enhance finance monitoring and auditing. FHF needs to pay frequent monitoring visits to the sites.
 - Management of VCs needs to employ business approaches and competitive incentives.

5. FHF may consider signing agreement with suppliers on procurement price of equipments and surgical consumables. The project hospitals can get more discounts from the procurement price and decrease the cost of surgery further more.
6. Suggestions to capacity building:
 - Assign trained circulating nurses for facilitating cataract surgeries
 - Training of backup cataract surgeons, at least two surgeons in one hospitals
 - Further training for optometrists, focusing on application of Phoropter and refraction of complicated cases.
 - CSOM form should include important information, such as IOL implantation rate and cause of poor outcome, which are helpful for continuous quality improvement of SICS.
 - Set criteria for trainees. Trainees with some experiences of microscope operation need relatively shorter training time. Incentive for training is also important to the effectiveness of training.
 - Set up a human resource center for SICS training. The center recruits experts from different hospitals and provides Training of Trainers to them. The qualified experts will be invited to deliver hands-on training for project hospitals. The experts have no interest conflicts with trainees and will be able to complete the training on schedule.
 - Set criteria for training centers and trainers and provide continuous support and monitoring. The criteria may include certain training experiences, TOT and the ability of developing individual training plan for trainees.
 - Trainings in IEC and advocacy
 - General management of hospital and eye department

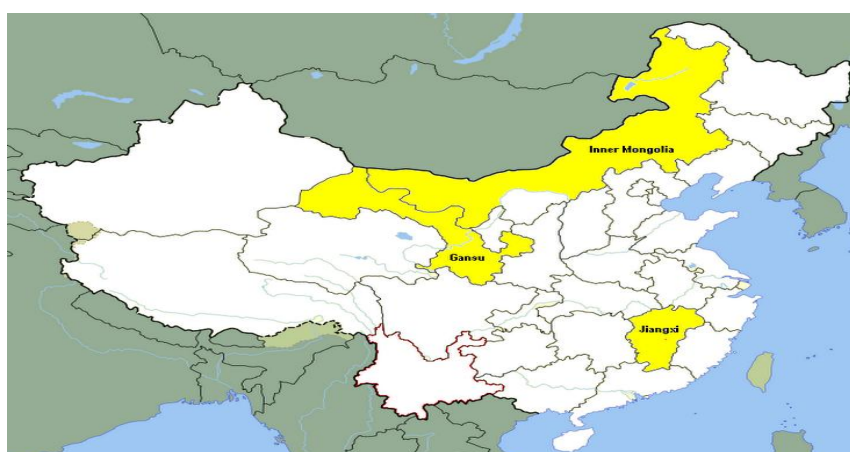
1. Introduction

1.1 Background

We were invited by Fred Hollows Foundation (FHF) China Program to conduct final evaluation of its project titled “Seeing is Believing IV” (SIB IV) between May and July 2013. This 3-year project was funded by Standard Chartered Bank (SCB) aiming to strengthen the delivery of high-quality, affordable, accessible eye care services focusing on cataract, refractive error (RE) and childhood blindness prevention for underserved communities across 9 prefectures/counties¹ in Gansu Province (Gansu), Inner Mongolia Autonomous Region (Inner Mongolia) and Jiangxi Province (Jiangxi). The project is expected to achieve the following objectives:

- To increase the number and strengthen the capacity of eye care personnel in existing health systems in Gansu, Inner Mongolia and Jiangxi;
- To improve the availability of eye health services in project areas through the establishment of vision centers and provision of essential equipment for screening, treatment and training;
- To improve awareness of, and access to, eye care services for underserved communities in the project areas;
- To undertake research and implement quality monitoring systems to inform project activities, determine project impact and develop future eye care plans;
- To strengthen the capacity of rural eye health services providers, local government and local bureau of health (BOH) in the project areas to effectively plan and coordinate prevention of blindness activities.

Figure1: Map of the project provinces



¹ The 9 project sites and partners: In Gansu: 1) Gaolan County, Gaolan County Hospital, 2) Longnan County, No.1 People's Hospital of Wudu District (Wudu Hospital), 3) Wuwei City, 3rd People's Hospital of Liangzhou District (Liangzhou 3rd Hospital). In Inner Mongolia: 4) Tuoketuo County, Tuoketuo County Hospital, 5) Shangdu County, Shangdu County Hospital, 6) Wuchuan County, Wuchuan County Hospital, and 7) the version center of IMREH in Tuzuoqi. In Jiangxi: 8) Xingan County, Xingan County Hospital, 9) Ningdu County, Ningdu County Hospital, and 10) Anyuan County, Anyuan County Hospital.

The project starts on August 2010 and ends on July 2013. The final evaluation looks at the implementation and results of the project throughout the duration.

1.2. Purpose and scopes

According to the TOR, the purpose of the final evaluation is to assess the project results against project goals and objectives in consideration of the outcomes and outputs set in the project plan, and document lessons learnt, challenges and recommend any necessary improvement that should be incorporated into the FHF's future projects. The following aspects are requested to be looked at:

- An assessment of project results against key objectives and planned outputs and outcomes, as stated in the Monitoring and Evaluation Plan attached to the PDD.
- An assessment of the quality of the project, based on qualitative and quantitative data gathered during the final evaluation.
- An assessment of project management, including effectiveness of project partner coordination, project reporting and project planning.
- An assessment of training delivered – from the perspective of both trainers and trainees.
- An assessment of current cataract surgical skills (small incision) and the quality of the services in the 9 county level partner hospitals.
- An assessment of accessibility and affordability of the implemented eye services with focus on cataract and refractive errors in 9 county-level partner hospitals and one vision centre.
- An assessment of the financial sustainability, marketing of the vision center in the county-level partner hospitals and vision center.
- An assessment of the project sustainability and ability of activities to continue independently after FHF activity has been phased out.
- Identification of the project's weaknesses, challenges and problems and recommendations for future improvement and possible replication.

1.3 Methods and limitations

The methods employed in this evaluation include document review, questionnaire survey, semi-structured in-depth interview, focus group discussion (FGD), observation and group consultation. For project sites not visited, questionnaire survey was carried out through email (The questionnaire is attached as Annex 1². The documents reviewed please refer to Annex 2.) Participatory tools such as 'ten seeds', scoring, project calendar, small group discussion, drawing were utilized purposely in order to assist free and open conversation with interviewees.

² The questionnaires are used as guideline for interview.

To assess quality of cataract services provided in the county hospitals, two methods were selected observation of live surgeries and review of medical records. In standardized training programs of developed countries, assessment of surgical skills is an important part and helps to ensure the competence of residents or trainees in cataract surgeries. Observation of live surgeries helps us to assess the surgical skills of trainees and review of medical records provides the information of cataract patients, including visual outcome, surgical complications and etc. We planned to observe 1 to 2 SICS surgeries and review 10 to 20 medical records in each hospital.

The evaluation has some constraints.

- Due to time constraints, visits to local interviewees were coordinated in advance by local partners. Some bias may occur as a result, however without this coordination, interviewees would have taken longer to locate, making the evaluation more difficult. The sites of field visit, local health care workers (HCW, including school doctors and teacher, township clinic doctors and village doctors) and beneficiaries were not randomly selected and sample size of some groups is small. We and FHF agreed to select all 3 sites in Inner Mongolia because the mid-term evaluation found more difficulties there. One site which was not visited during the mid-term evaluation from each of Gansu and Jiangxi was selected by FHF. All local CHWs and beneficiaries were arranged by local partners.
- Some stakeholders were not available for interview for different reasons. We did not meet students and teachers expect 1 principal in Shangdu County because our visits came cross to college entrance examination. A couple of representatives of township clinics happened to have other urgent business. Some beneficiaries moved to live with their children in other places. That means our understanding of those stakeholders' point of view may be limited.
- There was no compulsory measure to guarantee responses of the questionnaire survey. So that the questionnaires were not responded by all partners.
- In Liangzhou 3rd Hospital, the surgery was cancelled since the patient's husband was injured accidently the day before surgery.
- The data of visual outcome at 4 weeks or more post-operation are not available. Information at discharge was collected and taken it as reference of cataract surgical outcome in project hospitals.

The constraint will have implication for the findings and conclusion.

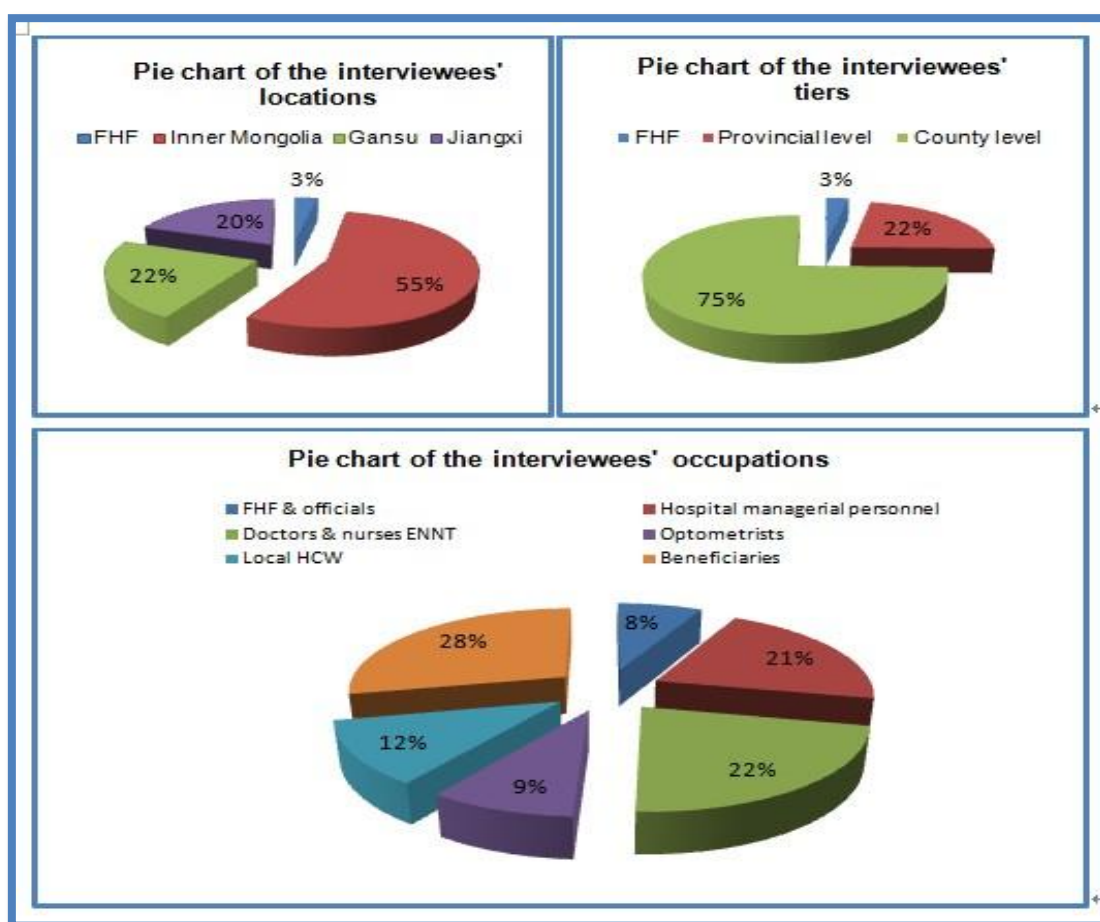
1.4 Field Work

We made a 10-day field visit to Inner Mongolia and Gansu between May 31st and June 9th. Another 3-day field visit to Jiangxi was made between July 18th and 20th. FHF's final review meeting involving key

representatives of all project hospitals was happened in Hohhot between July 8th and 10th. We provided feedback of the evaluation to the participants and conducted group consultation with them. The FHF office made the schedule and arranged all logistics. (Please refer to annex 3: schedule.)

The project sites visited include: Hohhot, Shangdu County, Tuoketuo County and Wuchuan County in Inner Mongolia, Lanzhou and Liangzhou District of Wuwei City in Gansu and Xingan County in Jiangxi. In total, we visited 7 hospitals and their 3 vision centers (VC), 1 school, 3 township clinics and 1 private clinic. We also interviewed 67 (25 female and 42 male) stakeholders ranging from officials of government departments, managerial personnel, ophthalmologists, optometrist and nurses of the project hospitals, local HCW, beneficiaries of Small Incision Cataract Surgery (SICS) and FHF's responsible project officer and manager. (Please refer to annex 4: List of the Interviewees.)

Figure 2: Pie Charts of the interviewees by different natures.



Seven surgeries performed by 4 surgeons from 4 hospitals³ were observed.

³ The 4 ophthalmologic surgeons are Dr. Huang Ping of Shangdu County Hospital, Dr. Bai Xiaoping of Wuchuan County hospital, Dr. Lian Wenying of Tuoketuo County Hospital and Dr. Zhou Yougen of Xingan County Hospital.

Eighty-five medical records were reviewed in five hospitals, including 20 in Shangdu, 11 in Wuchuan, 17 in Tuoketuo, 21 in Wuwei and 16 in Xingan. All the records were completed from January 2012 to May 2013 and randomized selected by evaluation team from the medical record departments.

Table 1: Number of medical records reviewed

Locations	Number of Medical Records
Shangdu County Hospital	20
Wuchuan County Hospital	11
Tuoketuo County Hospital	17
Liangzhou 3rd Hospital	21
Xingan County Hospital	16
Total	85

1.5 Questionnaire Survey and Group Consultation

FHF Project Officer emailed the questionnaires to all project hospitals in June. The questionnaire 1 was designed for persons responsible for project management and coordination; the questionnaire 2 was for persons who participated in the trainings, seminars or study tours; the questionnaire 3 was for ophthalmologists trained in SICS and optometrist; and questionnaire 4 is for each VS. In total, we collected 50 copies of questionnaires as table 2 summarizes.

Table 2: Number of the questionnaires collected

	Questionnaire 1	Questionnaire 2	Questionnaire 3	Questionnaire 4
LZBEH	1	2	1	0
Wudu Hospital	1	2	1	1
Liangzhou 3 rd Hospital	0	0	0	1
Gaolan County Hospital	0	0	0	1
IMREH/Tuzuoqi VC	1	6	1	1
Shangdu County Hospital	1	3	1	1
Wuchuan County Hospital	1	1	1	0
Tuoketuo County Hospital	1	1	4	1
Anyuan County Hospital	1	4	1	1
Xingan County Hospital	1	1	3	1
Ningdu County Hospital	0	0	0	1
Total	8	20	13	9

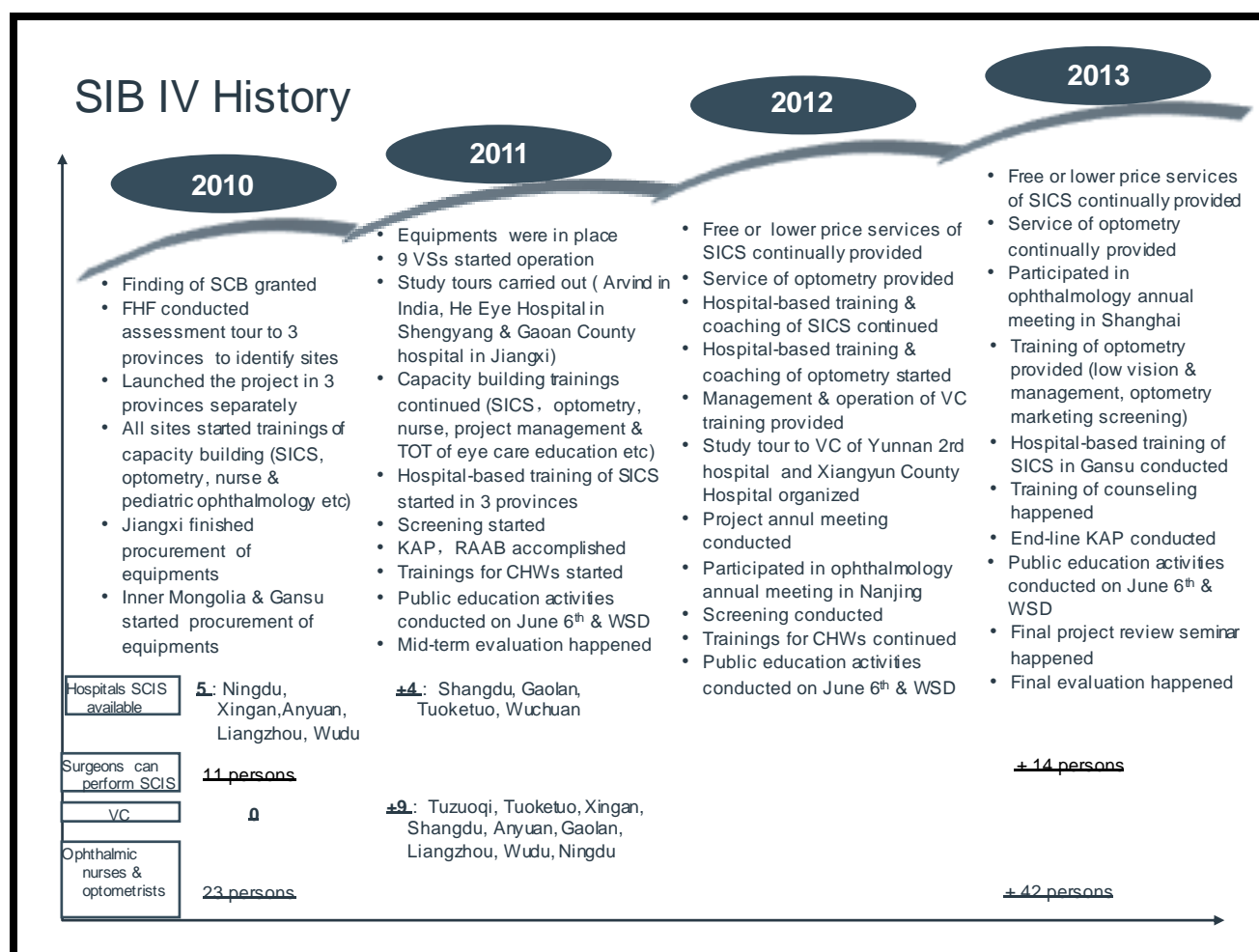
At final project review seminar organized by FHF in Hohhot, we presented rough summary of the evaluation and collected additional data through participatory group activities. In total of 37 participants including government officials, leaders, doctors and nurse of the 11 project hospitals and FHF staffs part in the seminar.

2. Findings

2.1 Implementation and results

The project activities accomplished and the expected quantitative targets achieved. Figure 3 summaries the key activities accomplished.

Figure 3: History of the project⁴



⁴ Information source: FHF

All project hospitals have obtained capacity and necessary equipments. They started providing services of SICS, RE treatment, training for CHW, public education and outreach screening since 2011. The project achieves following outputs and outcomes by the end of July 2013, showing in table 3.

Table 3: Key outputs and outcomes by the end of July 2013⁵

Key Outputs	Key Outcomes
Objective 1: To increase the number and strengthen the capacity of eye care personnel in existing health systems in Gansu, Inner Mongolia and Jiangxi	
<p><u>LZBYH & IMREH</u></p> <ul style="list-style-type: none"> ▪ 4 surgical trainers trained in SICS (100% completed) ▪ 9 physicians trained in glaucoma (another 4 from county level trained at same time) (225% completed) ▪ 5 optometrists trained in advanced RE treatment (125% completed) ▪ 11 nurses trained (another 7 from county level trained at same time) (275%) <p><u>County Level</u></p> <ul style="list-style-type: none"> ▪ 47 person-times trainings in performing SICS for eye doctors provided (100% completed) ▪ 26 nurses trained in cataract surgical assistance (144% completed) ▪ 32 person-times trainings in RE treatment for optometrists provided (222% completed) ▪ 9 management personnel trained in optical management & coordination for outreach (100% completed) ▪ 20 person-times trainings in producing spectacles for technicians provided (100% completed) ▪ 27 eye doctors/nurses/managerial staffs trained as trainers (45% completed) ▪ 2556 CHWs trained (111% completed) 	<ul style="list-style-type: none"> ▪ 6357 cataract surgeries performed independently by surgeons trained ▪ 100 % surgeons trained in how to implementing CSOM
Objective 2: To improve the availability of eye health services in project areas through the establishment of vision centers and provision of essential equipment for screening, treatment and training.	

⁵ Data source: all quantitative data is provided by FHF.

Key Outputs	Key Outcomes
<ul style="list-style-type: none"> ▪ 9 vision centers established (100% completed) ▪ RMB 1.29 millions of refraction equipment invested ▪ RMB 1,98 millions of cataract equipment invested ▪ RMB 0.24 million of cataract surgical training equipment invested to IMREH and LZBEH ▪ A torch and a visual acuity chart provided to each of community health workers/ teachers/ parents 	<ul style="list-style-type: none"> ▪ Utilization of the center is progressing measured by volume of services provided. ▪ The equipment purchased had been utilized frequently. ▪ 100% of the equipment adequately maintained
Objective 3: To improve awareness of, and access to, eye care services for underserved communities in the project areas.	
<ul style="list-style-type: none"> ▪ 143482 persons screened (113% completed, including 89315 community members and 54167 school students) ▪ 9716 patients received cataract surgery (97% completed); the female patients made of 59% and the male made of 41%. ▪ More than 91886 patients medically treated ▪ 37295 spectacles produced (155% completed) ▪ 100% of the people in service area of the hospitals is exposed to information of eye care knowledge and service ▪ 640470 copies of IEC produced 	<ul style="list-style-type: none"> ▪ All interviewed patients satisfied with the treatment ▪ People become more willing to seek health professional's help when they feel uncomfortable in their eyes⁶. <p><i>Data for the indicators below is not collected routinely:</i></p> <ul style="list-style-type: none"> ▪ % of referral acted on ▪ % of people referred who actually received further examination or treatment: ▪ Annual CSR ▪ % of total RE patients with vision corrected ▪ % of patients satisfied with the treatment
Objective 4: To undertake research and implement quality monitoring systems to inform project activities, determine project impact and develop future eye care plans.	
<ul style="list-style-type: none"> ▪ Baseline survey for 9 project sites accomplished ▪ RAAB survey and KAP survey accomplished ▪ Post-intervention KAP survey accomplished ▪ Mid-term and final evaluation conducted ▪ 	<ul style="list-style-type: none"> ▪ All hospitals use hard copy of CSOM form in Chinese but not the soft ware ▪ Number of results analyzed and disseminated to sector stakeholders: ongoing ▪ 1 message developed Health Promotion

⁶ Source: FHF's post-intervention KAP report

Key Outputs	Key Outcomes
	activities.
Objective 5: To strengthen the capacity of rural eye health services providers, local government and local bureau of health (BOH) in the project areas to effectively plan and coordinate prevention of blindness activities.	
<ul style="list-style-type: none"> ▪ 3 project launch ceremonies conducted ▪ 13 person-times of local BOH's officials took part in the project activities. ▪ 7 annual project management workshops conducted ▪ 5 leaders participated in national forum on ophthalmology ▪ 15 leaders attended study tour to Tianjin Eye Hospital, Wenzhou Eye Hospital and He Eye Hospital ▪ 7 project managers & leaders attended international study tours to Arvind Eye Hospitals and LV Prased Eye Hospital in India 	<ul style="list-style-type: none"> ▪ Interviewed government officials acknowledged unique contribution of the project to achievement of reducing avoidable blindness in all locations.

2.2 Services of SICS

People living in the project areas enjoys easier access to better services of SICS free of charge or at lower cost. Almost all eligible cataract patients in these areas can get service of standardized SICS in local county hospitals rather than in superior hospitals which may far away from their homes. All interviewed beneficiaries of SICS in Inner Mongolia said that they would go to Hohhot for surgery if the service was not available in the county hospitals. A beneficiary Mr. Zhang Zhenshu received surgery in Shangdu Hospital in April this year. His daughter suggested him to get surgery in Jinan where she lived. He refused to go due to consideration of cost and inconvenience. It is predictable that indirect cost of patients, such as costs of transportation and attending of family members reduce a lot when they seek service locally.

I heard news from village doctor that the county hospital could perform cataract surgery. If the county hospital could not provide surgery, I would go to Hohhot. It is inconvenient to go to Hohhot. - Mr. Wang Quzai, Tuoketuo County

Other patients who have done surgery said, the county hospital can perform surgery, so (I) did not need to go to Hohhot. - Mr. Liu Yu, Tuoketuo County

The cost of SICS for patients who covered by New Rural Cooperative Medical Scheme (NRCMS) and Urban Resident Medical Insurance (URMI) in 9 project sites is low but various ranging from free to hundreds of Yuan. According to Dr. Bai Xiaoping, patients In Wuchuan pay nothing for domestically made

intraocular lens (IOL) and up to 500 hundreds Yuan for the best quality imported flexible IOL. Dr. Wang Kenian introduced that tired prices were available in Liangzhou 3rd Hospital: free surgery is available when some projects provide subsidies or recruitment of hospital-based training of SICS; 500 Yuan for domestically made IOL and 900 Yuan for imported flexible IOL. In Xingan County, SICS surgery is free because Brightness and Smile Project led by the provincial government provides input, according to Dr. Zhou Yougen.

Although cost might not be the first and foremost obstacle for patients to seek service of SICS, lower price or free surgery is still highly appreciated by patients. The post-Intervention KAP conducted by FHF indicates contradict results: about 90% of the interviewees expressed willingness to pay for their elderly family member to have cataract surgery while the percentage who would prefer free surgery has increased in all locations. For patients in poor rural areas in Inner Mongolia and Gansu, they are likely motivated by free surgery to take timely treatment on their own initiatives. As Dr. Wang Kenian in Liangzhou 3rd Hospital pointed out, “900 Yuan may not be a problem for patients of town center or nearby, for those who live remotely they may not be able to pay.” In Shangdu Hospital, 3 cataract patients were waiting for surgery when we visited there. Three of them visited Dr. Huang Ping after heard the news that cataract surgery was free in the county hospital. One of them said “no money for surgery if it is not free”. Another 62-year old cataract patient may have optical nerves problem. That means result of surgery might not be favorable. He insisted to get surgery because the operation was free.

Last year I took my mother here because her vision has been poor for 7 or 8 years. She was not covered by NRCMS (last year). We went back and took part in NRCMS. She comes today and (gets) surgery free...she has to get surgery no matter free or not, but free of charge is better. - Mr. Guo, son of a cataract patient in Wuchuan Hospital

All interviewed beneficiaries show satisfaction to the surgery and their quality of live improved. Seventy-seven years old Mr. Liu Dinghan, a beneficiary in Wuchuan was playing mahjong when we visited his home. Ninety-four years old Mr. Liu Yu received cataract surgery 2 month ago in Tuoketuo County Hospital. When we entered his home he immediately recognized Dr. Lian Wenying who did surgery for him. Mr. Liu lost his vision in early last year. He said, he could not see his lighter for smoking and only could seek by hands. Now he can walk in village by himself.

I received surgery for both eyes within 3 days in early this year... I only could see things in short distance. Results of the surgeries are very good. I can see the wall of the opposite courtyard from here. - Mr. Zheng Daren, Liangzhou

I did not feel pain. The surgery was quick, only last for half hour. This eye has clear vision but another eye only sees black when I watch TV. I want to get surgery from Dr. Wang when the weather gets cooler. Children are working somewhere else and will come back in winter. They can look after me at that time. I only could not do fine work before the surgery. After the surgery, I felt my eye becoming bright and can do any kinds of works... It is troublesome without eyesight. - Ms. Ma Xiuying, Liangzhou

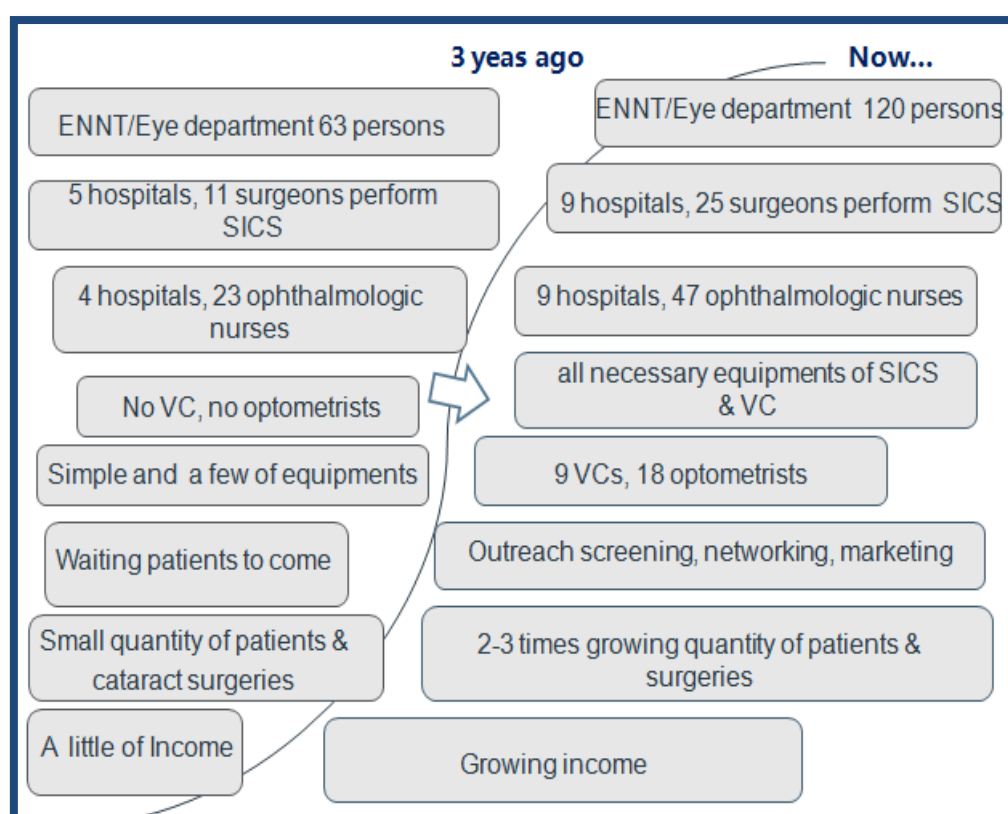
I could not see clearly, but not severe in the beginning, so I visited Dr. Zhou. Dr. Zhou put in a lens for me. My eyesight reached to 1 after the surgery... there several neighbors received cataract surgery, their results are good. - Mr. Li Fugen, Xingan

There 3 or 4 acquaintances of me received surgery of cataract. My eyesight was poor. I asked those who did the surgery. They all said their surgeries were good so that I took surgery. -Ms. Xi Yuzhen, Xingan

2.3 Outcomes and Impacts of the county hospitals

The greatest achievements obtained by the county hospitals. All county hospitals' competencies of delivering services of cataract surgery and RE treatment increased enormously. Their reputation increased, source of patients expended and ENNT/Eye department have developed to different extent.

Figure 4: Impact of the project to the county hospitals



Number of professional personnel of ENNT/ Eye department in the county hospitals almost doubled during 3-year of the project.

Table 4: Increment of eye care professions in the county hospitals⁷ in 2010 and 2013⁸

Hospitals	2010				2013			
	NO. of persons in ENNT/Eye department	No. of surgeons perform SICS independently	No. of ophthalmologic Nurses	No. of optometrists	NO. of persons in ENNT/Eye department	No. of surgeons perform SICS independently	No. of ophthalmologic Nurses	No. of optometrists
Gaolan	2	0	0	0	5	1	1	2
Wudu	17	1	8	0	25	2	11	2
Liangzhou	4	2	0	0	18	4	9	2
Shangdu	5	1	0	0	7	1	2	1
Wuchuan	2	0	0	0	5	1	1	0
Tuoketuo	3	0	0	0	4	3	2	1
Anyuan	7	3	5	0	16	3	8	2
Xingan	14	2	6	0	19	5	6	3
Ningdu	9	2	4	0	17	5	7	2
Tuzuoqi	0	-	-	0	4	-	0	3
Total	63	11	23	0	120	25	47	18

As table 4 shows, number of personnel of ENNT/Eye department in all county hospitals increased between 1 in Tuoketuo County Hospital to 14 in Liangzhou 3rd Hospital. Each of the 9 county hospitals excluding Wuchuan has 1 to 3 optometrists in 2013 but none in 2010. Five hospitals (Gaolan, Liangzhou, Shangdu, Wuchuan and Tuoketuo) had none ophthalmic nurses before the project and now have at least 1 and up to 9. In total of 14 surgeons obtained ability of performing SICS independently during period of the project. However a couple of trained surgeons left. One surgeon of Tuoketuo County Hospital is studying for master degree. One surgeon of Anyuan Hospital relocated to other place.

All 9 county hospitals are equipped with better and necessary equipments for operating SICS and optometry. Those equipments make better and new services of eye care possible in the county hospital. According to the director of Shangdu County Hospital Mr. Zhao Jianjun, the ENNT only had a slitlamp in the past and even could not provide basic service of eye disease; now they have the best equipments in their region, “the ENNT only could treat ‘red eye’ (local term for one type of conjunctivitis) by offering eye-drops, now they have B-ultrasonic scanner and AB- ultrasonic scanner”.

The ENNT has almost all types of equipment now. There was only a slitlamp in the past. Even did not have an electronic ophthamotonometer. – Mr. An Yongping, director of Tuoketuo County Hospital

The eye department has achieved earth-shaking changes. The former eye department only had outpatients. Now they have inpatient ward of 20 beds, under renovation. – Mr. Tang, deputy-director of Liangzhou 3rd Hospital

⁷ The VC planed for Wuchuan Hospital was relocated to TuoZuoqi as a branch of IMREH because Wuchuan Hospital's rejection of establishing a VC there in the beginning.

⁸ Data source: FHF

The project provided investment of 2.99 million to equip eye department and VCs of 9 county hospitals.

Table 5: Input of equipments in the county hospitals⁹

Hospital	Input of equipments (Yuan)
Gaolan County Hospital	462,590
Liangzhou 3 rd Hospital	446,675
Wudu County Hospital	438,560
Tuoketuo County Hospital	241,140
Shangdu County Hospital	393,233
Wuchuan County Hospital	240,223
Xingan County Hospital	243,950
Ningdu County Hospital	247,450
Anyuan County Hospital	279,720
Total	2,993,541

Better equipments partially resulted in some improvement of quality of service. *“We bought new microscope, Leica in 2011, its visual field is excellent. Quality of surgery improves a lot, and process of surgery speeds up. One surgery usually needed half-hour using the old microscope, but only need half of time using new Leica microscope ”*, Dr. Huang Ping of Shangdu County Hospital told us.

The investment of project also played a role of catalyst for more investment of the hospitals and induced hospitals' expectation of ENNT/Eye department. Shangdu County Hospital spent additional 300,000 Yuan on refurbishment of surgical room of ENNT and equipments. Both Wudu Hospital and Liangzhou 3rd Hospital purchased Phaco after the project started. Dr. Wang Kenian and Dr. Xu Lixin of Liangzhou 3rd Hospital think the final decision of buying Phaco was accelerated by input of the project. Dr. Xu Lixin learnt Phaco in 2009, he said “we have applied for Phaco for 7 to 8 years, but the hospital did not agree.” Until last year, the equipment was bought. The deputy-director Mr. Tang said “Without investment of FHF, our hospital would not invest to the eye department. The project created a department.”

Quantity of patients, including cataract and other eye disease served increased, especially in Inner Mongolia and Gansu. In result, incomes of the ENNT/Eye departments and professionals increased to some extent. The quantity of outpatients and all types of surgeries in the visited ENNT/Eye departments in Inner Mongolia and Gansu at least doubled or tripled. Meanwhile income of the ENNT/Eye departments increased more than 10 times. Bonus of ENNT/Eye departments' professionals increased from hundreds to thousands per month, in general.

⁹ Data source: FHF

Amount of outpatients increased 3 times in comparison with 2009. Before the project, 60% of outpatients were diseases of ear, nose and throat, 40% were eye disease. Now the 60% of outpatients and 80% inpatients (majority is cataract surgeries) are eye disease. There is no obvious incensement of patients for ear nose and throat diseases - Dr. Bai Xiaoping, Wuchuan County Hospital

The ENNT did not gain income 3 years ago, and was the worst among all departments. Now its income reaches several ten thousands every month exceeding departments of pediatrics and Chinese Medicine. Income of Dr. Bai is as same as directors of other major departments. – Mr. Zhang Yuan, director of Wuchuan County Hospital.

Quantity of patients doubled. My income increases resulting from the project, the portion of salary of performance is 2000-3000 Yuan, 4 to 5 times more than the past. The incomes of other staffs also rise. Currently the income of eye department is below average of the hospital but better than departments of stomatology, pediatrics and dermatology. – Dr. Huang Ping, Shangdu County Hospital

Annual income of ENNT before the project was 30,000 to 40,000. Its annual income of 2012 was 300,000, and 80% was came from cataract surgeries. –Mr. Liu Shurui, director of finance department, Shangdu County Hospital

Numbers of outpatients increased. There were 700 last month, in average 700 to 800 every month. Three years ago, there were 400 to 500 patients every month. – Dr. Wang Kenian, Liangzhou 3rd Hospital.

Income of the ENNT for this first half year is as same as total annual income of last year, and increases by 5 times comparing with 3 years ago. The income of ENNT is about average of the all departments...ENNT staffs were often deducted before, now take bonus every month. Mr. Tang, deputy-director of Liangzhou 3rd Hospital

Patients for the eye department increased. There are 30 to 40 outpatients excluding emergencies every day. – Mr. Wang Bi, cashier of Tuoketuo County Hospital

However, increasing incomes of the departments do not necessarily resulted in more incomes for doctors and nurses of ENNT in Wuchuan. According to Dr. Bai Xiaoping, income of individuals is not responding to quantity of surgeries. Their average bonus is low, about 300 Yuan per month.

The trend of increasing services and income is seems not remarkable in Xingan County Hospital because of the spike in surgeries in 2009. The Brightness and Smile Project led by Jiangxi provincial government which was launched in 2009 has put great efforts in finding and treating cataracts. According to Mr. Deng Sheng of Xingan BOH and Dr. Zhou Yougen of Xingan County Hospital, almost all eligible cataract patients were identified and received surgeries in 2009. The number of cataract patients reached peak by the end of 2009. Therefore, the quantity of cataract patients has remained stable afterwards.

Another impact is that the hospitals learnt new ideas of service delivering and new approaches of management. The project brings new ways of qualified services to the project hospitals, such as outreach screening through building functional network with key stakeholders. For these public hospitals which usually get use to waiting for patients, patient-centered and outreach approaches are renovations. As Mr.

Wang Bi indicated, the most important contribution of the project is introducing new concepts, enhancing awareness of serving local people and making benefit to local people. In Liangzhou 3rd Hospital, ENNT learnt more ways of working, “in the past, waiting; and now reaching out and inviting in” (Dr. Wang Kenian). Liangzhou 3rd Hospital applied some of approaches, such as screening, follow-up of patients for internal management. They recently added targets of screening and follow-up of patients as request of performance management for all departments. The deputy-director of Liangzhou 3rd Hospital also appreciates the network of eye care introduced by the project; he regarded the network ‘intangible asset’ which could make continue impact on referral of patients. In Wuchuan County Hospital, the deputy-director Mr. Song Hong was impressed by the style of project management. He said he learnt managing time effectively.

(We learnt) how to make equipments profitable. We also learn screening; since only patients are identified treatment could be delivered... (We request) follow up of surgical patients. Within 7 to 15 days of discharge, responsible doctors should follow up with patient once. Director of the department is responsible for periodic review. The result of review will be linked to incomes. If you follow-up one patient, this patient would follow you forever. It is a way of guarantee market. – Mr. Tang, deputy-director of Liangzhou 3rd Hospital

In addition, the hospitals learnt cooperation with different partners of international NGO, private hospitals, local health administrations, township clinics, schools and so forth. Traditionally public hospitals did not have opportunity and necessity of networking. They recognized that building network has advantages of expending eye care education and source of patients. In Anyuan County Hospital, they has built long-term partnership with village doctors who could help in encouraging community member to take part in screening; obtained support of local government department to ensure smooth implementation of screening and survey. Dr. Lu Hongyu realized, “supports of local township clinics and village doctors are the most in need during entire process of implementation.”

Work with FHF, SCB, cooperative hospital, local education and health departments, schools, township and community health centers, local governmental departments such as DPF, administration of radio, film and television, TV station etc. Try all kinds of ways to obtain their acknowledgements and supports. - Dr. Zhang Yanjun, Wudu Hospital

Our partners include local BOH, township clinics, village doctors etc. The county BOH manages all public resource of health care. Getting supports of the BOH would half our works with double results, for instance for community screening. Township clinics link us to village doctors. We need their help in organizing and recommending village doctors for training. Village doctors work at grassroots and have best knowledge of local residences’ health issues. They could help in screening and referral. Schools provide assistance in delivering eye care education for teenagers and screening. – Dr. Zhou Yougen, Xingan County Hospital

2.4 Outcomes and Impacts of IMREH and LZBEH

Comprehensive ability and profile of IMREH and LZBEH increased. IMREH and LZBEH obtain broader recognition and reputation among government departments, ophthalmologic circles and communities by providing supports to the county hospitals and carrying out some non-profitable eye care services to the public. In opinion of Ms. Yang Guli who is in charge of blindness prevention of Inner Mongolia BOH, IMREH as a private hospital has done great job in supporting county level public hospitals for this project. IMREH has taken a lot of cataract-related works of the province, and filled gaps which provincial BOH was not able to cover. The provincial BOH intends to create model of private hospital and IMREH will likely become the first privately owned key specialized hospital. Mr. Chen Xiaoqian of Lanzhou DPF praised LZBEH's cooperation of carrying out national program of restoring vision for millions of poor cataract patients. He knew that LZBEH supported 3 county hospitals to carry out cataract surgery. From him, we knew that Ms. Wu Yali the director of LZBEH received award of outstanding individual working for disabled persons during period the 11th Five-Year Plan this year, as acknowledgement of LZBEH's contribution to society.

LZBEH's reputation among circles of ophthalmology increased. – Ms. Wu Yali director of LZBEH

Public hospitals more or less had some rejection to our private hospital. Now we gain some space. The government and society recognize LZBEH in a better way. –Ms. Zhang Yan, project coordinator of LZBEH

By providing assistances to the county hospitals, doctors there can know better about our techniques, principles and culture. And they could refer some patients to us. And ability of helping county levels also adds points to our reputation. Our non-profit activities welcomed by people....The implementation of the project makes contribution to our relationship with provincial BOH too, and they get to know us in a better way. -Mr. Zhang Bozhou the president of IMREH

IMREH and LZBEH functioned as provincial coordinators and technical supports to the county hospitals in Inner Mongolia and Gansu. In the process of implementing activities, both hospitals gradually obtained awareness and skills of project management. They learnt standardized procedures of management. Ms. Liu Lihong of IMREH learnt that finance management should have clear procedures and responsibility, and reimbursement should strictly against the budget, she said “the project is implemented following the plan, and rarely drifts away from the plan. We started use this way in organizing our activities in 2012. For example, we made plan of event on Nurse Day and then implement following the plan. ”

“I did not know how to organize a meeting and made a schedule when I took over the project...now I learnt to make responsibility clear to everybody, keep tracks with evidence. Let data speaks. I may look at things in a way of more comprehensive. I tended straightly to point out mistakes in the past. Now my working style changed, I would say, ‘this problem emerges, if we could try this or that...’ –Ms. Tuo Ya, project coordinator of IMREH

Those experiences obtained from the project can benefit the two hospitals in their cooperation with various partners. Ms. Zhang Yan of LZBEH believed that the experience of managing international program would be advantage when LZBEH applies for government's project. Same idea is shared by Mr. Zhang Bozhou. Currently IMREH is negotiating cooperation of optometry with Berkley University; Mr. Zhang thought the experience of running this project is strength of IMREH.

The two hospitals broadened their visions of development. They realized that there are still a lot of people need help and they ought to take more social responsibility. *"LZBEH alone is impossible to solve eye problem of the poor in Gansu. We should spread out technologies and skills. The more people the more strength,"* Ms. Wu Yali pointed out. She bought in principle of Arvind in India, which is serving more people through development and taking benefit deserved through good services. The President of IMREH Mr. Zhang Bozhou emphasis the hospital should take its social responsibility. He defied providing advanced optometry services and advocacy of national policy change as direction for future development.

We get impression from interviews with leaders and staffs of IMREH and LZBEH, the hospitals has moving to better situation in last 3 years. Ms. Zhang Yan of LZBEH thinks that 30% such positive changes could attribute to this project. However her colleague Mr. Feng Yong only gave 10%. No matter how, it is fair to say the project has assisted development of IMREH and LZBEH more or less.

2.5 Capacity Building Activities

The capacity building trainings of the project were generally effective although some training were not well tailored for individual trainees at the beginning. The capacity building activities include including trainings of SICS, optometry and ophthalmologic nurse, study tours, project annual meetings, counseling, TOT of eye care education and so forth. Average score of satisfaction to each activity is 9¹⁰ according to the questionnaires collected.

Training of SICS was provided in two ways: short courses and hospital- based hands-on trainings. At the end of this project, all the trainees have mastered surgical skills and are able to perform SICS independently. They felt that hands-on training contributed significantly to the learning of surgical skills. They learnt SICS step by step in hands-on training and could get feedback from trainers' right after the surgery. The short course training gave them chance to observe different types of surgeries, for instance, Phaco, Dacryocystorhinostomy (DCR), pterygium, correction of trichiasis, etc. However, they seldom had chance to perform surgeries under supervision which may be due to the risk of training. The trainees perform surgery under supervision will have the possibility of malpractice and the risk of lawsuit for

¹⁰ Score ranging between 1 and 10, 1 means satisfied the least. 10 means satisfied the most.

malpractice is increasing in China. The private hospitals consider quality of surgeries as the core competence and try to minimize lawsuit.

Local master trainers of cataract surgery pay attention to feedback of patients; they care about 'word of mouth' of patient and impacts to entire hospital. Therefore, trainees hardly get opportunity of hands-on practice. Inviting experts from other provinces to provide mentoring in county hospital have obvious outcome. -Ms. Zhang Yan, project coordinator of LZBEH

All the trained nurses were satisfied with the training provided and learnt necessary knowledge and skills for nursing of cataract patients. However some of them left the position afterwards. The trained nurse in Wuchuan Hospital was promoted as chief nurse of Central Operating Room in 2011 and did not work as circulating nurse for SICS. Other nurses took turns to work as circulating nurse for SICS which caused low effectiveness and less care for the surgical equipment including microscope.

General nurses and ophthalmic nurses were sent to Tianjin Eye Hospital and Wenzhou Eye Hospital for training of optometrist. They learnt basic knowledge and refraction skills during the course and obtained certificate of refractionist. The courses mainly focused on application of retinocopy and auto lens edger, which were not consistent with the equipment provided in optometry center. Most of trained optometrists could perform refraction independently after training, but they did not know how to use Phoropter and semi-auto lens edger. Trainers from IMREH, LZBEH or optical shops were invited to give further training.

Other activities include project annual meetings, study tours, trainings of counseling, TOT of eye care education and participation of all kinds of conferences. Majority of participants satisfied with these activities because they learnt new knowledge, skills and experiences. Many interviewees particularly appreciated study tour for broadening their vision and increasing their awareness. Most of them were also satisfied by project annual meeting. However, few participants were less satisfied. For instance, a couple of participants thought the study tour to XiangYun County Hospital in Yunnan were ineffective, because their needs were not met. There is a tendency observed: the surgeons were unlikely satisfied by project annual meetings and study tours which were highly appreciated by the managerial personnel.

Study tour to the VC of Yunnan 2nd Hospital gave me a big thrilling, kind of brain wash. I thought VS was only a place of making pairs of glasses in the past. In fact, VC can provide 'screening and treatment. The products are different with products of glasses shops in the street, because the services, techniques are different. – Mr. Tang, deputy-director of Liangzhou 3rd Hospital

2.6 Ability of SICS

The ability of SICS of project hospitals developed to different extent. Levels of services vary in different regions and there is still room to improve.

- Surgical skills and volumes improved.

The ability of SICS of project hospitals has been developed from nothing in Inner Mongolia, improved significantly in Gansu, and improved to a certain degree in Jiangxi. In Inner Mongolia, there are only one cataract surgeon in Shangdu and Wuchuan and two cataract surgeons in Tuoketuo. Cataract surgical volume has been increased to 200 cases per year in three project hospitals. In Wuwei Gansu Province, number of cataract surgeons has been increased from 2 to 4 and cataract surgical volume has been increased from less than 100 cases to 300 cases per year. In Xingan Hospital, the proficiency of cataract surgeons has been improved but the number of cataract surgeons and cataract surgical volume had no increase.

- Outcome of SICS are reasonable good.

According to recommendation of WHO, IOL implantation rate and visual outcome at 4 week or more post-operation are two key indexes of cataract outcome. Visual outcome after surgery is categorized into three types based on presenting visual acuity: Good (0.3-1.0), Borderline (0.1-0.25) and poor (<0.1). The criteria are:

- At 4 weeks or more post-operation, less than 5% of the operated eyes have a presenting visual acuity less than 6/60. (poor outcome)
- At 4 weeks or more post-operation, more than 85% of the operated eyes have a presenting visual acuity of 6/18 or better. (good outcome)
- The percentage of cases receiving an IOL is more than 90%.
- The posterior capsule rupture rate is less than 5%.
- The vitreous loss rate is less than 5%.
- The presenting visual acuity at discharge is less than 6/60 in less than 10% of cases.

Since Chinese edition of the Cataract Surgical Outcome Monitoring (CSOM) system is not available currently, the CSOM form has been used in all project hospitals as monitoring tool. All the forms are sent to FHF office for data analysis. However, the information in the CSOM form is not complete in which the IOL implantation rate and the reason of poor outcome are missing. In project hospitals, most of post-operation patients do not come back for follow-up unless they feel uncomfortable. The information at 4 week or more post-operation is not available in most cases. The result of CSOM form analysis based on visual outcome at discharge is shown in Table 6.

Table 6: Result of CSOM form analysis¹¹

	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2
% of total surgeries undertaken that achieved PVA _≥ 6/18	86.50%	92.20%	93.67%	92.10%	90.30%	94.57%	87.80%	91.78%
% of total surgeries undertaken that achieved PVA <6/18 to ≥6/60	7.52%	3.50%	0.66%	2.34%	3.23%	1.23%	7.53%	2.35%
% of total surgeries undertaken that achieved PVA<6/60	5.98%	4.30%	5.68%	5.56%	6.47%	4.20%	4.67%	5.87%

The outcome of SICS in all project hospitals are reasonable good since it meets the criteria of WHO recommendation. The analysis of CSOM form indicated that the percentages of good and poor outcome ranged 86.5-94.57% and 4.2-6.47%, respectively. Observation of live surgery indicated that all the surgeons were proficient in SICS and completed the surgery within 10 to 25 minutes. The review of medical record showed that the IOL implantation rate is 94.1-100.0% and percentages of good and poor visual outcome at discharge (the first day after surgery) are 54.5-87.5% and 0.0-9.0%, respectively. The main cause of poor outcome is corneal edema which was supposed to be disappeared within 4 weeks post-operation.

Table 7: Outcome of cataract surgeries in the project hospitals¹²

Province	Hospital	General information				Visual outcome at discharge				
		No. of Cases	Surgeon	IOL implantation rate	Cause of no IOL	Good 0.3-1.0	Borderline 0.1-0.25	Poor <0.1	No record	Cause of poor surgical outcome
	Shangdu	20	Huang Ping	95.50%	High myopia	12(60.0%)	5(25.0%)	1(5.0%)	2(10.0%)	Corneal edema
Inner Mongolia	Wuchuan	11	Bai Xiaoping	100%	N/A	6(54.5%)	4(36.4%)	1(9.0%)	0(0.0%)	Corneal edema
	Tuoketuo	17	Lian Wenying	94.10%	High myopia	13(76.5%)	3(17.7%)	1(5.9%)	0(0.0%)	Corneal edema hyphema
Gansu	Liangzhou	21	Wang Kenian	100%	N/A	16(76.2%)	5(23.8%)	0(0.0%)	0(0.0%)	N/A
		13	Zhou Yougen	100%	N/A	12(92.3%)	1(7.7%)	0(0.0%)	0(0.0%)	N/A
Jiangxi	Xingan	2	Yang Haifeng	100%	N/A	1(50.0%)	1(50.0%)	0(0.0%)	0(0.0%)	N/A
		1	Zhang Xiaoyong	100%	N/A	1(100.0%)	0(0.0%)	0(0.0%)	0(0.0%)	N/A

¹¹ Data source: FHF¹² Data source: the medical records reviewed in the hospitals visited

- The care of surgical instrument, equipment and consumables vary.

The surgical instrument, equipment and consumables for cataract surgeries are delicate and should be appropriately managed by the special assigned people, which help to extend service life. In Xingan and Shangdu, there are nurses who are responsible for the care of all the surgical instrument, equipment and consumables. In other hospitals, there are no fixed personnel for caring. In Tuoketuo, there is no fixed operating room for cataract surgery and the microscope was moved from one operating room to another frequently.

- Infection control need to be further improved.

In Shangdu County Hospital, the scrubbing, sterilization and operation are set in the same room. The sharp waste is not separated from other medical waste, which may cause potential hazard.

In Wuchuan County Hospital, the patient was sent to the operating room without changing hospital gown and surgical cap.

- Scrubbing nurse increased efficiency of cataract surgery.

In Shangdu County Hospital, one circulating and one scrubbing nurse were very familiar with surgical procedure and facilitated cataract surgeries effectively.

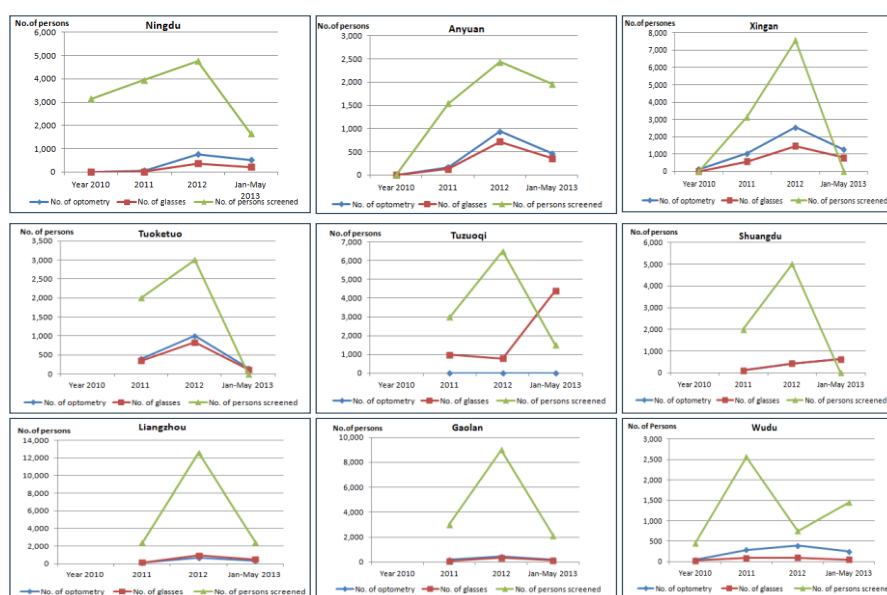
2.7 VCs

All 9 VCs operate smoothly with growing volume and income but qualities of service need to be improved. Their further developments face opportunities and challenges.

The VSs in all project optometry centers have started to deliver refraction services. Standardized refraction procedure has been established in each center. The optometrists provide refraction for general patients and still have difficulties in dealing with complicated cases, such as patients with nystagmus, anisometropia and strabismus etc.

The quantities of refraction served and pairs of glasses made of each VC has increased in last two year. The quantity for this year is expected to exceed last year since a jump will come soon during summer vacation of school. Growing trend in each VC is demonstrated in figure 5.

Figure 5: Growing trend of optometric services in each VC



Although currently 8 of them (excluding Tuzuoqi) are far from profitable, trend of their incomes is upward, as table 8 shows

Table 8: Income and expense of the VCs

Vision Center	Year 2010	2011	2012	January –May 2013	Remarks
Ningdu	(356,850)	(11,250)	(221,917)	27,420	Inclusive of expense
Anyuan	0	44,894	200,995	58,814	Exclusive of expense
Xingan	(273,250)	(72,200)	(61,250)	16,000	Inclusive of expense
Tuoketuo	(206,000)	23,700	63,000	(4,300)	Exclusive of expense
Tuzuoqi	(40,569)	131,655	177,895	1,503,451	Inclusive of expense
Shangdu	0	(236,650)	33,860	42,290	Inclusive of expense
Liangzhou	0	21,679	153,963	72,929	Exclusive of expense
Gaolan	0	(281,088)	(109,388)	(1,820)	Inclusive of expense
Wudu	(4,160)	(29,135)	(22,370)	(1,440)	Inclusive of expense

However, the refraction services in all centers are incomplete medical refraction. Medical refraction consists of examination of eyes to determine abnormalities, objective and subjective refraction. To provide precise prescription, especially for children, the accommodations, visual function and binocular vision should be taken into account during the process of refraction. Phoropter is an important tool for

medical refraction and should be daily used by optometrists. In all the project optometry centers, the phoropters are less frequently used meanwhile auto-refractor and retinoscope are the main tools for refraction and even the trial lenses in Tuoketuo. The accommodation, visual function and binocular vision cannot be detected by auto-refractor, retinoscope and trial lenses. Less use of Phoropter may be due to lack of training and follow-up.

Currently there are some common difficulties constraint further development of the VCs. 1) Unlike Tuzuoqi VC which is run by IMREH following market-driven principles, the other hospitals manage VCs in the same way of managing public hospitals. Their working hours of VCs are basically as same as outpatients. Given a factor that a big chunk of customers of optometry are children and school students, the working hours at present are not convenient for them. In addition, the hospitals did not have attractive incentive mechanism to motivate both optometrists and ophthalmologists dedicating to expand services of refractions. 2) In average there are 2 optometrists working for the VC in each hospital, their workload is considerable heavy. 3) Although the VCs tried some marketing approaches, such as outreach screening and discounting for promotion, the hospitals are still lack of experiences of marketing. Some hospitals conducted promotions but did not pay enough efforts to follow-up. The promotions did not necessarily bring in customers automatically and continually. 4) There is no blue print to follow in terms of managing VC owned by public hospital, due to local situation is different from place to place. The hospitals are still exploring appropriate way of managing this new and for-profit business. And exploration is not easy. In Tuoketuo County Hospital, some money spent for public relation as cost of promoting services. But Legitimacy of this sort of expenditure is a blurry area of finance management of the hospital. 5) Competition of market is rigorous for these new comers.

Operation of the VC is not impressive. Cooperation between doctors and VC is not very good. We are a bit under staffed. We work at normal working time of outpatients and rotate days off. It will be better if we open during lunch time and prolong working hours. It will be best that doctors visit patients here, and open at weekend. Vision management should be developed. Although there are many glasses shop in Wuwei, we are the only one run by the hospital. - Ms. Wu Shuping, optometrist of Liangzhou 3rd Hospital

Although facing difficulties, all of the project hospitals have high expectation on the VCs which are regarded as a new driver of income for ENNT/Eye departments.

The VCs have following advantages for further development: 1) fully equipped, 2) following standard procedures, 3) quality of services sound and are improving, 4) can provide comprehensive services of eye care due to strong back up of ENNT/Eye department, 5) customers may give more trust due to the background of public hospital owned, 6) refraction services are covered by NRCMS and URMI, and 7) hold better position to mobilize resources of government and society.

The VCs of county hospitals lack experiences and deal a few cases of strabismus and amblyopic. Comparing with glasses shops they do better job of optometry. Their skills of making glasses are better than me. They have standardized procedures. They have fewer patients during working days so that they have sufficient time communicating with patients. They can perform optometry for 40 to 50 for general patients per day. But one person cannot hold all optometry, making glasses and sales. – Ms. Mali, master trainer of optometry IMREH

There is potential in the VC. We try to increase scale and relocate enough personnel. –Mr. Tang, deputy-director of Liangzhou 3rd Hospital.

The VC is problematic. Part of current difficulties is management issues, and the team with sense of teamwork is not formed yet. So it is running inefficient. However effective operation is possible. Hopefully, next driver of profit is VC. - Dr. Huang Ping, Shangdu County Hospital.

2.8 Procurement and Maintenance of the equipments

The project invested about 3.9 million¹³ Yuan for equipments of 9 VCs and ENNT/Eye departments in 11 project hospitals. The procurement has been carried out in different way in order to gain best price without compromise quality. All the procurement was accomplished in 2011. Majority of donated equipments and instruments are in good condition and used frequently.

All equipments have been well maintained in the hospitals visited although we did not see any type of written procedures. Most equipment is in good condition and utilized frequently. Few of them are underused. In Liangzhou 3rd Hospital, the portable keratometry has been left unused for years. Local doctors used it for months and found that the measurements from the portable keratometry caused significant error in calculation of IOL power. In Tuoketuo County Hospital, a brand new perimeter had never been used. In optometry centers visited the Phoropters are less frequently used.

2.9 Information, Education and Communication (IEC)

Some activities of information, education and communication (IEC) conducted but effectiveness was not impressive. In all project locations, people become more willing to seek health professional's help when they feel uncomfortable in their eyes and people's health seeking behavior has in general been improved. However people's awareness of eye care knowledge has not been improved remarkably.

The activities of IEC conducted include producing and dissemination of pamphlets and leaflets to public on June 6th and WSD, posters displaying, advertisements, providing trainings of eye care for CHW and outreach screening. Most interviewed beneficiaries mentioned that they knew about the information through posters, TV or radio. These activities have made mixture results in raising awareness and

¹³ Include 470,000 yuan of IOL.

behavior of service seeking in the project area and nearby. In 2nd Middle School of Shangdu County, teachers learnt importance of eye care and standard calisthenics of eye from the ENNT of Shangdu County Hospital in 2012. Since then, teachers in charge of classes have organized near 1700 students carrying calisthenics of eye every day, according to Mr. Jian Yongjun, principal of the school. The FHF's reports of post-intervention KAP surveys among adult, child and elderly people conducted in July 2013 indicate following mixture results¹⁴:

- In Gansu, adults without knowledge of blinding eye diseases dropped very slightly from 57.9% to 53.4%, those without knowledge of treatable eye diseases increased from 36.1% to 40.8% and those without knowledge of eye disease treated through surgery dropped from 37.5% to 36.3%. In Jiangxi, the percentages of these three groups changed from 48.9% to 54.2%, from 44.3% to 46.8% and from 39.8% to 52.2%. In Inner Mongolia, the percentages changed from 43.5% to 57.9%, from 45.2% to 63.4% and from 44.8% to 66.8%.
- In both Gansu and Jiangxi, the interviewed adults who had never had eye check dropped from 45.7% to 34.4% and from 33.8% to 26.5% while in Inner Mongolia, the percentage increased from 17.5% to 23.8%.
- Interviewed adults become more willing to seek health professional's help when they feel uncomfortable in their eyes. In Gansu, the proportion of people who will seek health professional's help (including consulting village doctor, go to township hospital and go to county hospital and above) increases from 49.7% to 59.8%. In Jiangxi, the proportion increases from 71.4% to 80.2%. In Inner Mongolia, it increases from 53.0% to 54.2%.
- As for health seeking behavior related to child, the percentage of interviewees who will take child to see the doctor if the child cannot see clearly has always been high even before the project. It remains almost unchanged in Gansu and Jiangxi. In Inner Mongolia, the number has increased from 63.5% to 71.4%.
- There is little change in the best-known eye diseases among the students interviewed except that trachoma is no longer one of the top three in Inner Mongolia. The awareness of amblyopia which has high incidence among children has increased from 18.4% to 25.6 in Gansu, from 14.8% to 32.9% in Jiangxi, and from 30.2% to 32.1% in Inner Mongolia. Meanwhile, those who think wearing glasses will make eye sight even worse has dropped from 52.9% to 41.2% in Gansu, from 52.5% to 23.8% in Jiangxi, from 48.1% to 46.9% in Inner Mongolia.
- The percentage of interviewed students who had never had eye check has dropped from 52.1% to 30.3% in Gansu, from 39.5% to 31.8% in Jiangxi and from 20.6% to 18.0% in Inner Mongolia.
- In Gansu, the proportion of the students who got the glasses at the hospital has increased from 24.4% to 30.4% while those who got from the optical shops dropped from 64.1% to 50.4%. In Jiangxi,

¹⁴ Cited from PFH's Report for Post-Intervention KAP Survey of the Project "Seeing is Believing IV"(Adults), Report for Post-Intervention KAP Survey of the Project "Seeing is Believing IV"(Children) and Report for Post-Intervention KAP Survey of the Project "Seeing is Believing IV"(Elderly People above 50)

although the percentage of those buying from optical shops kept almost the same (from 34.5% to 35.4%), the percentage of those got from the hospital has increased from 41.6% to 50.8%. In Inner Mongolia, the proportion of these two groups changed from 66.8% to 54.5%, from 27.0% to 42.0%.

- Percentage of elderly people who had their eyes checked by health professional increased from 18.0% to 43.6% in Gansu, from 66.0% to 73.4% in Jiangxi and from 35.0% to 48.8% in Inner Mongolia.
- Elderly people are more willing to seek doctor's help when they feel uncomfortable in their eyes. In Gansu, the proportion of people who will see the doctor increases from 41.0% to 70.5%. In Jiangxi, the proportion increases from 56.9% to 61.6%. In Inner Mongolia, it increases from 54.0% to 67.1%.
- The knowledge of cataract drops (among elderly people) significantly in most cases. In Gansu, people who have heard of cataract rise from 67.0% to 83.5%, but those who know that cataract is treatable and surgery is the right way to treat cataract fall from 83.0% to 77.0% and 87.0% to 75.3% respectively. In Jiangxi, the proportions of these three groups fall from 83.0% to 81.8%, from 73.0% to 53.9% and from 84.7% to 76.2%. In Inner Mongolia, the figures fall from 82.0% to 73.6%, from 75.0% to 66.0% and 84.2% to 66.2%.

The materials produced by the project did not specify target audience. Majority of the pamphlets or leaflets consist of too much information and knowledge. Efforts to ensuring clear messages and delivery of messages were not enough. In addition, the project hospitals tended to implement IEC activities isolate rather than planning and implementing IEC together with other activities as comprehensive measures.

2.10 Partnership among private and public hospitals

The project piloted new model of partnership which bring in private hospitals as technical supporters and coordinators of management. To our best understanding, it is the first attempt in China that building strategic partnership among private and public hospitals for tiered supports. IMREH and LZBEH are private hospitals which played important roles as technical supporters in provincial level to the county public hospital. They also coordinated implementations of the project among FHF and the county hospitals in the provinces.

It is worth to analyze the pros and cons of this innovative partnership which could shed light to partnership building for blindness prevention in the future. The following opinions are contributed by the participants of the group consultation.

Advantages of private hospital as supporter and coordinator of county public hospital include:

- The personnel administration is flexible and having teeth. The director can make decision of recruitment and elimination.
- Private hospital takes initiatives due to pressure of survival which public hospital does not face.
- Private hospital has more autonomy of procurement, unlike public hospital which has to go through

complicated procedures.

- Private hospital has flexibility to relocate human resources, for instance easier to add more people to carry out screening.
- Their doctors' attitudes towards work are more earnest, and they are friendly to customers.
- They have rich and flexible approaches of marketing promotion and awareness of promoting branding.
- Private hospital can bring new ideas and concept of good service
- Private hospital can provide comprehensive, delicate and time flexible coordination and technical support due to its flexible management.
- They are specialized and technically strong
- It is easy to communicate with private hospital

Limitations include:

- Both private hospital and county public hospital cooperate for their own good. They are unlikely work together unless they can gain something from each other or from other players.
- Private hospital does not provide real hands-on training since they consider more for quality. Some private hospitals in Jiangxi have high turnover of doctors. The doctors are usually recruited temporarily, so they are afraid of taking risks and responsibilities.
- County public hospital normally does not contact with private hospital. Communication is not smooth due to different systems. Communications between county and city public hospitals is also very limited.
- Many private hospitals are technically advanced than public hospitals, such as He Eye Hospital. But this is not the case in Jiangxi where development of private hospitals is constrained by policies
- In China, people still think private hospital is not good.
- Competition among private hospital and county hospital exists. It is happening that private hospital takes opportunities of trainings and screening for self-promotion.

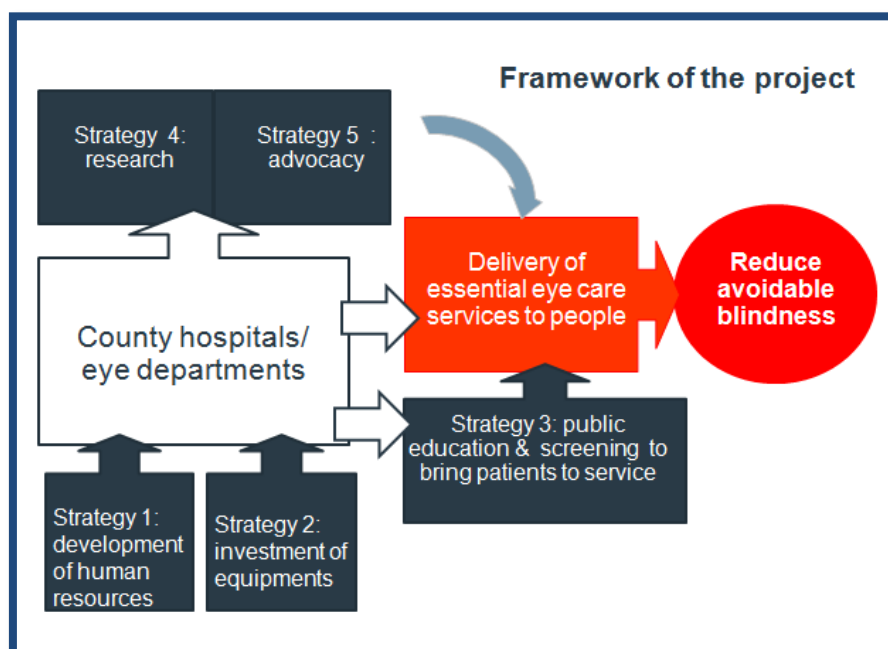
Although IMREH provided technical supports to Wuchuan, Tuoketuo and Shangdu County Hospitals, the county public hospitals still have some bias to private hospital due of issues of conflict interests and perceptions. It is unavoidable...The biggest obstacle of the project was that the partner public hospitals' bias to private hospital. They thought we would not provide training with all our hearts and used to reject our trainers.... In fact we did provide training with all our hearts. They see the results and shows recognition to our trainings finally. - Ms. Tuo Ya, project coordinator of IMREH

2.11 Design and Implementation of the Project

The project was designed rationally and the framework was clear. The strategies and activities interlinked and in line with the objectives. However, local vary realities were not took into consideration when the

project set the targets in the beginning. The intension of interrelationships among strategies did not draw enough emphasis during the implementation.

Figure 6: Framework of the project



We visualized framework of the project, shows in Figure 6. It appears a model of hospital-based blindness prevention at county level. The rational is enabling local county hospitals to provide essential services of eye care, cataract, RE and eye care education in particular though intensive investments to capacity building and equipments. The county hospitals are expected to take initiative to bring potential users of services into the care system through public education and screening which are implemented in partnership with various stakeholders, such as schools and township clinics. Research is designed to collect evidences for advocacy and health education. Given consideration of sustainability, advocacy for government support is crucial. The project expects that the hospitals roll out their services beyond clinical treatment solely.

However there are some shortcomings during the implementation.

- Some of the original targets of stages were not achievable mainly because the county hospitals did not participate in planning process in the beginning. The project expected a surgeon trained on SICS for 3 months can perform surgery independently, and a quick increscent of services delivered to beneficiaries. Such expectations might set upon FHF's experience previously obtained in Jiangxi and experiences of IMREH and LZRBH. In fact, Inner Mongolia and Gansu have different social economic situation. Capacities and available resources of delivering services of eye care in each hospital were also very different.

As admin staffs we are not familiar with clinical professional works. FHF requested us to train a ophthalmologic surgeon within 3 month, we agreed. Later on we realized it was impassible. The doctors complained a lot. We did not have experience and learning by doing. – Ms. Zhang Yan, project coordinator of LZBEH

Three years ago we discussed targets of annual cataract surgery with FHF based on our volume, 2000 cases per year. We did not aware that the county hospitals could not achieve assigned targets. Three years are not long for ENNT to grow. - Ms. Wu Yali, director of LZBEH

The targets of cataract surgery, based on demographic situation of Gansu decided before the agreement signed were beyond actual capability. – Ms. Zhang Yan, project coordinator of LZBEH

- The hospitals devoted to accomplishment of each activity and sort of ignored interrelationships among strategies and activities. For instances, the KAP conducted but results were not be used for advocacy and public education. Screening was carried out but timely follow-up might be neglected. This maybe resulted from that the hospitals had little experience and understanding of such project. Matter of fact, for all project hospitals it was the first international blindness prevention project employing multiple strategies. ENNT/Eye Department of the county hospitals are understaffing might be another cause.

2.12 Management of the Project

Management of the project is formal, flexible and functional but facing many difficulties. The project took different ways of management in 3 project provinces. FHF has long history working in Jiangxi province, and the county hospitals there are comparatively strong in competent of delivery services of eye care. The 3 county hospitals are directly managed by the project officer of FHF. In Inner Mongolia and Gansu, two private eye hospitals were identified as provincial technical supporters and coordinators. It is a challenge to maintaining effective communication among this a bit complicated structure which involving over 12 players in 3 levels. Impressively this structure has gradually worked functionally and communication has evidently improved although there were many problems emerged in the first one and half year, especially in Inner Mongolia.

The project is managed hierarchically. It has some advantages that the superior hospital guides us to make work plan together, because the superior hospital have rich experiences in all aspects. They can help us in solving a lot of practical problems, avoiding many difficulties and improving efficiency. – Dr. Zhang Yanjun, Wudu Hospital

The top-down hierarchical management assigns tasks in a systematic way. It is good for implementation of the project. However, there are problems constraining effectiveness of the project, such as lack of transparency, poor coordination, unclear targets, being divorced from reality etc. –Mr. Wang Bi, project coordinator of Tuoketuo County Hospital

Management became smoother. The improvement started after the mid-term evaluation and project annual meeting of coordination. The meeting re-clarified procedure of

reimbursement and discussed plan and targets of 2012 in detail. - Ms. Tuo Ya, project coordinator of IMREH

The management of the project is reasonable good but facing difficult. FHF has a set of formal and standard guidelines including finance management, reporting and monitoring to ensure effectiveness. On the one hand, the project hospitals learnt new style of management and they impressed by precise and intensive monitoring. On the other hand, the project operated under management of two systems, FHF's system and hospital's system. So compliance of the county hospitals was problematic for various reasons. For most of the cases, the directors of ENNTs are the coordinators of the project in the hospital. They are usually overloaded, and a couple of them are not good at computer and internet. In some hospitals the key leaders and finance departments do not provide full support to the coordinators.

The project was able to maintain flexibility of making adjustment in responding to local reality in order to maximize outcomes of the project. As the Mid-term Evaluation Report indicates, "adding hospital-based surgical training for the county hospitals in Gansu and Inner Mongolia as an example." And recommendations of mid-term evaluation adopted in later implementation.

The responsible persons of the project are all part-time. The Eye Department is small, and does not possible spend more time in writing report. Quarterly report is sort of go through the motions, rarely raising issues, and does not play function of communication... it is really difficult asking for monitoring forms. FHF urges me, I urge them. – Ms. Tuo Ya, project coordinator of IMREH

For the project hospitals, frequent change of responsible project officer of FHF imposed more burdens of communication on them. During period of 3 years, the project changed 3 project officers.

FHF's project officers changed frequently. Ma Yulong just understood difficulties of project in Gansu and left. Although the work was passed to (successor), we have to help them to understand situation again. – Mr. Feng Yong, project coordinator of LZBEH

FHF changed 3 project officers. Frequent turn-over affected implementation of the project. People has different ways of working, I need to adopt different working styles. – Ms. Tuo Ya, project coordinator of IMREH

2.13 Sustainability of the Project

It is reasonable to foresee optimistic continuity of the project, particularly for the essential services of quality cataract surgery and optometry. All county hospital will continually provide services of SICS free of charge or at lower cost for vary reasons, the skills are there; favorable government policies are there; needs are there, and wiliness of the hospital are there. The services of optometry will continue because of aforementioned reasons. At the group consultation, the participants analyzed feasible activities which can be carried out after close of the project. The participants of each hospital worked together to measure feasibility of sustainable activities by giving sore from 0 to 10 to each activity. Zero means not feasible at

all. Ten means certain continuity. Both services of SICS and optometry are indentified to be carried out, (Please refers to table 9.)

Table 9: Feasibility of Sustainable Activities¹⁵

Inner Mongolia					Jiangxi				Gansu				
Activities	IMREH	Tuoketuo	Shangdu	Wuchuan	Activities	Ningdu	Xingan	Anyuan	Activities	LZBEH	Liangzhou	Gaolan	Wudu
SICS	10	10	10	10	SICS	10	10	10	SICS	N/A	N/A	10	N/A
Optometry	10	10	8	5	Hospital-based SCIS training	3	2	4	Trainings & meeting in province	10	10	10	10
Screening	10	3	5	5	Train CHW	6	7	8	Screening	10	10	8	8
Train CHWs	10	5	2	3	Public education	8	8	9	Optometry	10	10	10	9
Train doctors nurses & optometrist	10	8	8	5	KAP	1	2	3	Hospital-based SCIS training	10	10	4	8
Hospital-based SCIS training	10	5	5	5	Screening	8	5	8	Public education	10	10	10	5
Equipment	10		5	3	Optometry	10	10	10	Screening in remote area	6	5	8	5
Public education	10	8	5	5	Technical training for professionals	5	6	5	Training outside the province	8	3	5	6
Study tour & seminar etc	10	5	8	5	Study tour & seminar	3	5	3	Further professional development	6	N/A	3	6
KAP	8	3	3	3					Government cooperation	N/A	10	N/A	N/A
Pediatric ophthalmology	10	2	2	3					Train CHW	N/A	5	N/A	N/A
Government cooperation	10	5	2	5					KAP	N/A	0	N/A	N/A

Following factors may squeeze margin of profit and become potential risks to the sustainability of free cataract surgery

- The cost of consumables. The cost of consumables accounts for majority cost of cataract surgery. The SICS needs a set of consumables, including IOL, viscoelastics and sharp point, etc. We found that the cost of a set of consumables varies from 150 Yuan in Xingan to around 600 Yuan in Wuchuan. From year 2010 to 2012, there was a blindness prevention BSI which provided 50,000 free cataract surgeries. Large volume procurement decreased the procurement price to 150 Yuan for a set of consumables during “Bright Smiling Project”. Xingan hospital obtained the consumables at the price from the suppliers. Other hospitals obtained the consumables at much higher price because of small amount of procurement.
- The cost of the physical evaluation before surgery. Prior to surgery, evaluation of general health is essential. In different project hospitals, different items are checked which cost from 150 to 300 Yuan.

As the table 9 shows, other commonly agreed sustainable activities include: further technical trainings for doctors, nurses, and optometrist, trainings and meetings in the provinces. Screening, public education

¹⁵ Each hospital identified the sustainable activities by themselves; therefore they did not give score to all activities. Those missing data in the table are remarked as “N/A”.

and hospital-based SICS training are seems more possible to be continued in some hospitals than the others. The least feasible activity is survey (KAP) which in fact is neither essential nor urgent in terms of reducing avoidable blindness at this stage.

The commonly shared reasons of low feasibility among the participants are lack of funds, understaffing and high cost of operation. They discussed solutions of which some are more practical than the others. In spite of applicability, the process of discussion could help the participants gaining some useful ideas.

3. Conclusions

The project successfully implemented and gained win-win results among different stakeholders. The vision of the project is well received by the partner hospitals. People in these regions enjoy easier access to affordable quality cataract surgery, RE treatment and information of eye care. The project hospitals built up their eye departments for long term development. Many local individual professionals and leaders improved their awareness and professionalism.

The following factors contribute to achievements of the project:

- The project contributes to local government-led efforts.
- FHF has unique mature approach of training SICS surgeon - hospital-based hands-on training. This is the most reliable and efficient way to guarantee improvement of surgical skills.
- There is a group of skillful master-trainers who were trained by FHF in previous project available to provide technical mentoring.
- Key leaders of the hospitals support the project; the ENNT/Eye departments are motivated to build up their competencies taking opportunity of implementing the project.
- Management of the project is strictly but flexible which allows adjustment to be made in responding to local reality in order to ensure impacts.
- Makes the procurement of equipment flexible Keeps timely and effective communication throughout the project
- Commitment of improve eye are capacity and serve local communities

The following factors limit achievements of the project:

- The county hospitals do not have transparent and competitive incentives mechanism to motivate staffs.
- The provincial project coordinators and the county hospitals have competition before the project.
- ENNT/Eye departments are lacking of human resources
- The project hospitals do not pay enough efforts to management of the project
- Lack of participation of stakeholders from the county hospitals in planning

- Those county hospitals which have only one surgeon face potential risk of brain drain.

4. Recommendations

4.1 Project site

A comprehensive assessment need to be conducted in every project sites before making decision. It is important to involve suggestions of potential partners in the process of planning. It is also necessary to set up key criteria of potential project sites according to expected outcomes of the project.

- Project contributes to overall goal of local government and fills gaps which government's effort unable to reach.
- Opportunity of catalyzing local inputs for long-lasting impact
- Space and potential for project to make greater achievement.
- Both private and public hospitals can play role of provincial technical supporter and coordinator of project. However both of them have their advantages and limitations. Private hospital may be more efficient and flexible in project management. Public hospital may have more experience in teaching and have good reputation among public hospitals in subordinate level.
- Key leaders of partners make commitment to support.

4.2 Project design

- Try best to find leverage of mobilizing resources. For instance, project hospitals can apply for innovation scheme of government to promoting outcomes of the project.
- Design strategies and activities of advocacy.

4.3 Project management

- Communication and negotiation among project hospitals in all level should always be addressed
- Makes commonly agreed structure and procedures of project management clear for all project hospitals, and keeps flexibility for review and adjustment.
- Plan of implementation should be developed by all project hospitals, or finalized based on their suggestions.
- Project activities should be integrated to project hospitals' routine work.
- It is favorable to have a full time project coordinator of each of project hospitals. If not, project hospitals need to consider rearranging their workload. Project coordinators of hospitals' input to project should be counted as part of their performance.
- Considers providing some cost of project management in county hospitals, such as computer and internet. The portion of such supports should be reduced gradually to avoid dependency.
- Project coordinator of hospitals requests basic knowledge and skills of using computer and internet.

- Simplify procedures of management as much as possible. Enhance finance monitoring and auditing. FHF needs to pay frequent monitoring visits.
- Management of VCs needs to employ business approaches and competitive incentives.

4.3 Procurement of equipments and consumables

FHF may consider signing agreement with suppliers on procurement price of equipments and surgical consumables. The project hospitals can get more discounts from the procurement price and decrease the cost of surgery further more.

4.4 Training of clinical staffs and continuous technical support

- Assign circulating nurses for facilitating cataract surgeries
- Training of backup cataract surgeons, at least two surgeons in one hospitals
- Further training for optometrists, focusing on application of Phoropter and refraction of complicated cases.
- CSOM form should include important information, such as IOL implantation rate and cause of poor outcome, which are helpful for continuous quality improvement of SICS.
- Set criteria for trainees. Trainees with some experiences of microscope operation need relatively shorter training time. Incentive for training is also important to the effectiveness of training.
- Set up a human resource center for SICS training. The center recruits experts from different hospitals and provides Training of Trainers to them. The qualified experts will be invited to deliver hands-on training for project hospitals. The experts have no interest conflicts with trainees and will be able to complete the training on schedule.
- Set criteria for training centers and trainers and provide continuous support and monitoring. The criteria may include certain training experiences, TOT and the ability of developing individual training plan for trainees.

4.5 Other trainings

- Trainings of IEC and advocacy are necessary.
- General management of hospital and eye department would help in creating an enable environment.

Annex 1: Questionnaires

FHF China Program SIB IV Final Evaluation

Questionnaire 1: for persons responsible for project management and coordination

The 3-year SIB IV project supported by FHF starts on Aug. 2010 and ends on July 2012. The final evaluation of the project start between June and July 2013 in order to review and assess the implementation, achievements and lessons learnt of the project. Methods of the final evaluation include field visit, interview, and questionnaire survey and group consultation. Your assistance to complete the questionnaires honestly would be very important for collecting comprehensive information. Thanks for your contribution!

Personal Information of the Respondent

Name		<i>Danwei</i>		Date of answering	
Your role in your <i>Danwei</i>					
Your role in this project					

1. Does the project achieve its expected objectives in your opinion? Why?
2. What strategies does the project employ? Which strategies are effective? Which strategies are less effective? Why?
3. What activities did the project conduct? Please name 3 activities which you appreciated the most and explain why.
4. What activities you did not appreciate the most? Why?
5. Who are the partners of the project at different level? How and what did they cooperate?
6. What is the framework of the project? Please describe which components promoted or limited implementation and impact of the project and why.
7. What major obstacles did you face during the implementation of the project? How did you cope with?
8. What key impacts does the project contribute locally? Please list them in order of importance. For example, (1)The most important contribution is ... (2) The second important contribution is ... (3)The third... (4) The fourth...
9. How will you and your *Danwei* plan to continue the impacts of the project?
10. Do procedures of cataract treatment and refractive error in place in your *Danwei*? Please provide copies of these procedures. For instance, (1) procedure of cataract surgery, (2) procedure of coping risks, (3) standard procedure of refractive optometry, (4) the others
11. Please give 3 words to comment this project
12. Please provide your other thoughts and suggestions.

Questionnaire 2: for persons participated in any trainings, coaching, study tours, seminars

The 3-year SIB IV project supported by FHF starts on Aug. 2010 and ends on July 2012. The final evaluation of the project start between June and July 2013 in order to review and assess the implementation, achievements and lessons learnt of the project. Methods of the final evaluation include field visit, interview, and questionnaire survey and group consultation.

Your assistance to complete the questionnaires honestly would be very important for collecting comprehensive information. If you involved in the questionnaire survey of mid-term evaluation, please list the trainings, coaching, study tours and seminars you attended after January 2012 under question 2.

Thanks for your contribution!

1. Personal Information of the Respondent

Name		Danwei		Date of answering	
Your role in your Danwei					
Your role in this project					

2. Please fill the information of the trainings or study tours of the project in which you participated and score your level of satisfaction in terms of effectiveness (1 for the least satisfaction and 10 for the most satisfaction)

Type training	Date	Training Provider	Contents	Your expectations	Score on satisfaction (1-10)	Aspects of Satisfaction	Aspects of Dissatisfaction

3. What is your plan to continually improve your knowledge and skills after close of the project?**Questionnaire 3: for ophthalmologists of SICS and optometrists**

The 3-year SIB IV project supported by FHF starts on Aug. 2010 and ends on July 2012. The final evaluation of the project start between June and July 2013 in order to review and assess the implementation, achievements and lessons learnt of the project. Methods of the final evaluation include field visit, interview, and questionnaire survey and group consultation. Your assistance to complete the questionnaires honestly would be very important for collecting comprehensive information. Thanks for your contribution!

1. Danwei: _____ Name of the person answering: _____ Date of answering: _____

2. Ophthalmologists of SICS:

Name	Gender	Age	Length of working for eye department (year)	Perform SICS independently before the project (yes or no)	Months of training on SICS	Days of hospital-based SICS training	No. of SICS performed under coaching of master-trainers	No. of SICS performed independently during the project

3. optometrist

Name	Gender	Age	Years of working for eye department	Perform optometry independently before the project (yes or no)	Months of training on optometry	Length of hospital-based optometry training (day)	Numbers of optometry performed under coaching of the master-trainers	Numbers of optometry performed independently during the project	Numbers of glasses made under coaching of master-trainers	Numbers of glasses made independently during the project

Questionnaire 4: for VC

FHF China Program SIB IV Final Evaluation--- Business Condition Analysis of VC

Name of the hospital

Date of open of VC

Name of the manager

Name of
optometrist

Income and Expense		Year 2010	2011	2012	2013 June	Total(Yuan)	Remarks
Income (Yuan)	Refraction						
	Glasses						
	Medication						
	Amblyopic treatment						

	Other examinations						
	Other treatments						
	Others(please specify)						
Subtotal (Yuan)		0	0	0	0	0	
Expense (Yuan)	Rental						
	Utilities						
	equipments donated by the project						
	equipments purchased by the hospital						
	Consumables						
	Promotion						
	Salary						
	Others(please specify)						
Subtotal (Yuan)		0	0	0	0	0	
Total (Yuan)		0	0	0	0	0	
Volume of business		Year 2010	2011	2012	2013	Total(Yuan)	Remarks
Number of refractions							
Pairs of glasses made							
Number of persons screened							

Annex 2: List of the Documentation Reviewed

1. Terms of Reference for final Evaluation of the “Seeing is Believing IV ” Project
2. Mid-term evaluation report
3. Mid-term evaluation summary and follow up actions
4. FHF Annual Partnership Agreements (APA) with IMREH, LZBEH, Anyuan County Hospital, Ningdu County Hospital and Xingan County Hospital for 2013
5. Sub APAs among IMREH with the Tuoketuo County Hospital, Shangdu County hospital, Wuchuan County Hospital in Inner Mongolia and LZBEH with Gaolan County Hospital, Wudu Hospital and Liangzhou 3rd Hospital in Gansu for 2013.
6. Project Design Document (PDD) for Development of Essential Eye Care Services in Gansu Province, Inner Mongolia Autonomous Region and Jiangxi Province, China (2010-2013) June 2010, Version 10
7. Project Log frame updated on 8 July 2010
8. Revised Monitoring Framework
9. Original and revised work plan
10. MOU between FHF and Lanzhou Bright Eye Hospital
11. MOU between FHF and Hohhot Chaoju Eye Hospital
12. Project partner-hospitals’ Quarterly Progress Reports (QPR) for 2011, 2012 and 2013
13. FHF Project Officer’s trip reports for 2011, 2012 and 2013
14. Surgical training week Gansu Province China (*trainers’ report on TOT*) and SIB Phase IV SICS Training of Trainers, Gansu Province, China – International FHF China Response to Trainer’s Report Recommendation
15. The trip report on Consultant in Glaucoma Training in Hohhot Chaoju Eye Hospital in Inner Mongolia (*trainer’s report on ToT*)
16. Half Yearly narrative Reports, periods covered a) August to December 2010, b) January to June 2011)
17. Summary Report on KAP survey in Gansu Province, including adult eye care knowledge, cataract status and child eye health status.
18. Summary report of RAAB survey in Shangdu and Tuoketuo in Inner Mongolia.
19. Formal Request for Variation to the Original Proposal on 13 April 2011
20. Formal Request # 2 for Variation to the Original Project Proposal on 29th July 2011
21. Report for Post-Intervention KAP Survey of the Project “Seeing is Believing IV”(Adults),
22. Report for Post-Intervention KAP Survey of the Project “Seeing is Believing IV”(Children)
23. Report for Post-Intervention KAP Survey of the Project “Seeing is Believing IV”(Elderly People above 50)

Annex 3: Schedule

Date	Location	Activity
May 20 th -28 th	Kunming	<ul style="list-style-type: none"> Carried out desk review of project documents Drafted evaluation plan and tools Finalized the evaluation plan and schedule Interviewed two project staffs of FHF Distributed questionnaires through the responsible project staff of FHF
May 31 st		Arrived in Hohhot
June 1 st	Hohhot	<ul style="list-style-type: none"> Conducted interview with an official of Inner Mongolia BOH Conducted interview with 6 persons of IMREH individually Checked the wetlab of IMREH and the equipments there
June 2 nd	Shangdu County	<ul style="list-style-type: none"> Arrived in Shangdu County Conducted interview with 5 persons of Shangdu County Hospital, including director, project coordinator and doctor, nurses of ENNT and VC Conducted interviews with 3 cataract patients who were waiting for surgery and their family members Observed 3 SICS Checked medical records of cataract patients in last 2 years selectively Paid visit to VC
June 3 rd	Shangdu County	<ul style="list-style-type: none"> Examined visions for the 3 patients who received SICS yesterday Conducted interview with 2 beneficiaries of SICS Paid visit to Shuncheng Gongsu Village and interviewed a former village leader Paid visit to Xiaohaizi Township Clinic and interviewed the director Paid home visit to a beneficiary of SICS in Xiangyang Village Paid visit to the second middle school of Shangdu County and interviewed the principal Traveled back to Hohhot
June 4 th	Wuchuan County	<ul style="list-style-type: none"> Arrived in Wuchuan County Conducted interview with the directors of Wuchuan County hospital and doctor of ENNT Conducted interviews with 2 cataract patients who were waiting for surgery and their family members Observed 2 SICS Checked medical records of cataract patients in last 2 years selectively Paid visit to the health center of Kezhen District and interviewed the director of this health center and a director of another township clinic who happened to visit this area

		<ul style="list-style-type: none"> ▪ Paid home visit to a beneficiary of SICS ▪ Traveled back to Hohhot
June 5 th	Tuoketuo County	<ul style="list-style-type: none"> ▪ Arrived in Tuoketuo County ▪ Conducted interview with 5 persons of Tuoketuo County hospital including the director, project coordinator, doctors, nurses of ENNT and VC ▪ Conducted interview with a patients who just finished SICS ▪ Observed 1 SICS ▪ Checked medical records of cataract patients in last 2 years selectively ▪ Paid visit to VC ▪ Paid visit to Shangtan Village and interviewed the village-doctor ▪ Traveled back to Hohhot
June 6 th	Lanzhou Gansu	<ul style="list-style-type: none"> ▪ Arrived in Lanzhou City ▪ Conducted interview with the director of rehabilitation department of Lanzhou DPF
June 7 th	Liangzhou District Wuwei City	<ul style="list-style-type: none"> ▪ Arrived in Wuwei City ▪ Conducted interview with the deputy-director of the 3rd Hospital of Liangzhou District ▪ Paid home visit to 3 beneficiaries of SICS in Wuai Village and Caijia Village of Gaoba Township ▪ Visited a private clinic in Qingyuan Township
June 8 th	Liangzhou District	<ul style="list-style-type: none"> ▪ Conducted interview with 3 doctors and nurse of ENNT and VC ▪ Checked medical records of cataract patients in last 2 years selectively ▪ Paid visit to VC ▪ Traveled back to Lanzhou
June 9 th	Lanzhou	<ul style="list-style-type: none"> ▪ Conducted FGD with 7 staffs of LZBEH, including the director, project coordinator, doctors, technicians and nurse ▪ Conducted interviews with 2 staffs of LZBEH responsible to project ▪ Traveled back to Kunming
June 18 th	Xingan County Jiangxi	Headed to Xingan from Kunming
June 19 th	Xingan County	<ul style="list-style-type: none"> ▪ Conducted FGD with 6 preventatives of Xingan BOH, Xingan County Hospital, ENNT, VC and village-doctor ▪ Observed 1 SICS ▪ Interviewed 3 beneficiaries of SICS ▪ Checked medical records of cataract patients in last 2 years selectively ▪ Paid visit to VC ▪ Conducted interview with the director of the county hospital, doctor and nurse of ENNT and VC

		<ul style="list-style-type: none"> ▪ Paid visit to Shenzhenqiao Township Clinic and interviewed the director ▪ Conducted interview with 2 beneficiaries of SICS in Shenzhenqiao Township Clinic ▪ Held a meeting among the evaluation team
June 20 th	Xingan County	<ul style="list-style-type: none"> ▪ Held a meeting among the evaluation team ▪ Traveled back to Kunming
June 22 nd and July 5 th	Kunming	Collected the questionnaires, started analyzing data, prepared presentation of evaluation feedback for coming seminar
July 7 th	Hohhot	Arrived in Hohhot
July 8 th -10 th	Hohhot	Provided evaluation feedback at the seminar for project partners, facilitated group consultation for the evaluation
July 22 nd –August 14 th	Kunming	Analyzed data, drafted and finalized report
August 15 th	Kunming	Submitted the report in both English and Chinese

Annex 4: List of the interviewees

Date	Location	Interviewee
May 25 th	FHF office Kunming	Ms. Huang Yiwen Program Manger of FHF Mr. Cai Long Program Officer of FHF
June 1 st	Meeting room in IMREH Hohhot Inner Mongolia	Ms. Yang Guli from Inner Mongolia BOH Mr. Zhang Bozhou the President of Chaoju Eye Hospitals Ms. Liu Lihong the Director of IMREH Ms. Ma Li the technician of IMREC's VC Ms. Tuo Ya the project coordinator of IMREH Mr. Guo Qing the ophthalmic surgeon specific on cataract of IMREH Ms. Zhang Xiulan the head nurse of inpatient wards of IMREH
June 2 nd	Shangdu County Hospital Inner Mongolia	Mr. Zhao Jianjun the director of the county hospital Mr. Liu Shurui the project coordinator and finance manager Mr. Huang Ping the director of ENNT, ophthalmologist Ms. Cao Yanfei and Ms Hao Shuye, nurses of ENNT 2 gentlemen and 1 lady who came for SICS
June 3 rd	Shangdu County Hospital Shunchen Gongsu Village Xiao Haizi Township Clinic Xiang Yang Village The 2 nd Middle School of Shangdu	Mr. Zhao Zhencai and Ms. Sun Guilin, beneficiaries of SICS Mr. Su Ruiqian the former village leader Mr. Qiaojin the director Ms. Wang Mei beneficiary of SICS Mr. Jian Yongjun the principal
June 4 th	Wuchuan County Hospital Inner Mongolia Health Center of Kezhe District A beneficiary's home	Mr. Zhang Yuan the director of the hospital Mr. Song Hong the deputy-director of the hospital and the project coordinator Mr. Bai Xiaoping the director of ENNT, ophthalmologist Ms. Ma Guifang cataract patient just received surgery Son of a cataract patient waiting outside operating room Mr. Yuan Guohua the director of the health center Mr. Lu Fuyi the director of Shang Tuhai Township Clinic Mr. Liu Handing a beneficiary of SICS
June 5 th	Tuoketuo County Hospital Inner Mongolia	Mr. An Yongping the director of the hospital Mr. Wang Bi, cashier and project coordinator

		Ms. Lian Wenying the director of ENNT, ophthalmologist
		Mr. Tian Wei ophthalmologist
		Ms. Hao Min optometrist
		Mr. Wang Quzai cataract patient received surgery on the day
	Shangtan Village	Mr. Chi Lianfa village-doctor
	A beneficiary's home	Mr. Liu Yu beneficiary of SICS
June 6 th	Lanzhou DPF	Mr. Chen Xiaoqian the director of rehabilitation department of Lanzhou DPF
June 7 th	3 rd Hospital of Liangzhou District	Mr. Tang the deputy-director of the hospital
	Wuwei City	
	Wuai Village	Ms. Ma Xiuying beneficiary of SICS
	Caijia Village Gaoba Township	Mr. Zheng Daren beneficiary of SICS
	A private clinic in Qingyuan Township	Mr. Liu Yonghu owner of the clinic
June 8 th	3 rd Hospital of Liangzhou District	Mr. Wang Kenian the director of ENNT, ophthalmologist
		Mr. Xu Lixin the deputy-director of ENNT, ophthalmologist
		Ms. Wu Shuping optometrist
June 9 th	Meeting room of LZBEH Lanzhou Gansu Province	Ms. Wu Yali the director of LZBEH
		Ms. He Jihong the director of outpatient department
		Ms. Zhang Yan the director of operational department
		Mr. Feng Yong from department of social service
		Mr. Li Xinyou the manager of VC
		Ms. Lv Haiyan optometric of VC
		Mr. Zhang Wei ophthalmologist
June 19 th	Xingan County Hospital Jianxi Province	Mr. Deng Xinshen from Xingan County BOH
		Mr. Zhou the deputy-director of the hospital
		Mr. Zhou Yougen the director of ENNT, ophthalmologist
		Ms. Zhu Guoyun ophthalmologist
		Mr. Zhang Xiaoyong ophthalmologist
		Mr. Yang Weichun village-doctor of Tangtou Village Jinchuan Township
		Ms. Deng Lianxiang optometrist
		Mr. Li Fugen, Mr. Hong Yide and Ms. Xi Yuzhen beneficiaries of SICS
	Shenzhengqiao Township	Mr. Cai Xiaoyong director of the township clinic

Clinic

Ms. Yang Taoying and Ms. Zhou Dongxiang beneficiaries of
SICS
