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|  | Mid-term Evalualtion report  Comprehensive Rural Eye Care Model Project in Yunnan Province | |
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|  | |  |
|  | Dec. 14 2017 | |
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## Citation

None

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## List of acronyms

AHDU…………….…….Affiliated Hospital of Dali University

BPHSES…………………Basic Public Health Service Equalization Scheme

BOE………………………Bureau of Education

CHW…………………….Community Health Worker

CRECM…………………Comprehensive Rural Eye Care Model

CSOM…………………..Cataract Surgical Outcome Monitoring

CS…………………………Cataract Surgery

DPF……………………….Disabled Persons’ Federation

DR…………………………Diabetes Retinopathy

EENT ......................Eyes, Ears, Nose and Throat

FHF ........................The Fred Hollows Foundation

HFPC……………………..Health and Family Planning Commission (Former Bureau of Health)

MSICS…………………..Manual Small Incision Cataract Surgery

NHFPC ...................National Health and Family Planning Commission (Former called Ministry of Health)

PBL ........................Prevention of Blindness

PEC .......................Primary Eye Care

PHACO…………………Phacoemulsification

PHFPC ...................Provincial Health and Family Planning Commission

RE………………………..Refractive Error

TOR……………………..Terms of Reference

VA……………………….Visual Acuity

VC……………………….Vision Center (or optometry Center)

WSD:…………………..World Sight Day

YRCH ....................Yunnan Red Cross Hospital

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|  | **Comprehensive Rural Eye Care Model Project in Yunnan Province-**  **Increasing access for disadvantaged groups to universal eye care in chian** | |
|  | |  |
|  | Executive Summary | |
|  | Cao Hong, Dec. 14 2017 | |
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## Background

A pilot project “A Comprehensive Rural Eye Care Model (CRECM) in Yunnan Province-increasing access for disadvantaged groups to universal eye care” which was launched by Fred Hollows Foundation (FHF) in April 2016 will be finished in March 2019. The total budget of the project is 1,195,160 USD. The project addresses 3 main causes of avoidable blindness, cataract, RE and DR in a comprehensive way which is strictly in line with the National Prevention of Blindness Plan and The FHF’s Strategy. The objectives of the project include: to strengthen the capacity of public health personnel to deliver quality, sustainable, comprehensive eye-care services; to increase the availability and accessibility of integrated eye care services within the existing health system in pilot locations; to generate data & evidence to inform eye health planning, improve quality of interventions and document the CRECM; and to strengthen provincial prevention of blindness, hospital management and civil society to advocate for policy development and replication of the CRECM in Yunnan and other provinces in China.

The project is implemented in 4 levels of public system from province, prefecture, county and down to township/village in partnerships with Provincial Health and Family Planning Commission, the provincial prevention of blindness office and 7 public hospitals, including Yunnan Red Cross Hospital, Affiliated Hospital of Dali University, People’s Hospital of Wenshan Prefecture, People’s Hospital of Binchuan County, People’s Hospital of Nanjian County, People’s Hospital of Qiubei County and People’s Hospital of Yanshan County. Both Dali and Wenshan prefectures are agricultural and mountainous or semi-mountainous areas. Three of the 4 project counties are national poverty-stricken counties.

## Evaluation purpose and key evaluation questions

The purposed of the evaluation is to assess the progress towards the project’s purpose and objectives in consideration of the outcomes and outputs during the first 1.5 years of the project; to document lessons learnt and recommend any necessary changes that should be incorporated into the second half of the project. The evaluation questions include: (1) how likely is the project to fulfil its purpose and objectives once it has been completed? (2) How effective has the project management and coordination been to date? (3)To what extent has the project increased the capacity of the health facilities and health care professionals to deliver eye health services to people with cataracts, diabetes retinopathy and refractive error(4) How effectively has the project supported the establishment of comprehensive eye care services in the project sites? (5) What could be changed to improve the likelihood that the eye care system the project has set up is sustainable after the project finishes? (6) How effectively is the project improving access to eye care services by disadvantaged groups and women? (7) How could the project improve the likelihood of the eye care model being replicated in other counties of Yunnan Province?

The primary audience of the evaluation is FHF project team. It is anticipated that FHF will share the findings and recommendations of the evaluation to the relevant stakeholders upon their judgment.

## Methodology

The evaluation adopted qualitative methods, including literature and project documents review, semi-structured interview and observation. Some participatory tools were used to facilitate interviews and quantify comments of the interviewees. The field works was conducted in 7 places during September 5-22 2017. In total of 74 persons were interviewed, including health officials, education officials, FHF’s project team, the project team of Yunnan Red Cross Hospitals, directors, coordinators, heads, physicians and nurses of the project hospitals, community health workers (CHWs) and teachers.

## Evaluation findings

The key project stakeholders showed satisfaction and confidence in project implementation to date, except for the diabetes retinopathy screening and the vision center. The interviewed key stakeholders were satisfied with the project management and coordination. The managers and coordinators at all levels were clear about their roles and responsibilities. The capacity building activities were regarded as the best part of the project by the key stakeholders. The projects hospitals’ capacity of delivering cataract surgery, diabetes retinopathy prevention and refraction errors correction has been greatly increased particularly for the county hospitals. Eye screening has been carried out by all the project implementing hospitals. The referral within each project hospital worked well but the referral among the health facilities at different levels did not function well, as same as referral situation of all other diseases . The vision centres did not operate due to policy constraints. Most of the services supported by the project have become part of routine work of the hospitals. The project has reached some disadvantaged groups and women by the outreach eye screening but no specific measures were developed. The health officials of provincial, prefectural and county health and family planning commissions were aware of the project and showed positive perceptions to replication of the project.

## Conclusions

The project was well designed and greatly responded to the local needs. The FHF team and the project management office managed the project carefully with intensive follow-up and supports. The current horizontal structure of the project management has functioned more effectively. Most planned project activities have been implemented on track and the targets have been accomplished to date. The local capability of delivering eye care services has greatly increased. The mechanism of the eye screening has been set up but not institutionalised at each site. The project has obtained good potential for sustainability at each site and solid foundation of replication in Yunnan Province. The implementation of the project has generated some successful experiences.

## Recommendations

1. Project Management and Communication

* Regular communication among the key stakeholders at provincial, prefecture and county level need to be addressed. The progress reports or the project newsletters also need to be shared regularly with the officials of the health and education departments and the schools at the least.
* In order to achieve the goal and objective of the project, it is needed to have certain level of flexibility of adjustment at implementation level. This is extremely important to this project because it has involved multi sectors at multi levels, and the context has continually changing.
* Considering specificity of the project hospitals’ work, it might be helpful for FHF project team to inform the local implementers as early as possible so that they have longer time of preparation when meetings, trainings and unplanned work happen..

1. Project implementation

* Specific measures are needed to assist the disadvantaged groups and women to access the eye care services. A clear and shared definition about the targeted groups would be helpful to identify sensitive measures. It will be also helpful to provide some subsidies to poor patients, students and women.
* For building capacity of CHWs, it will be more effective to provide a series of short trainings on specific topics in a period of time. The training employing a plenty of practices will help CHWs to learn better.
* The strategies of the DR screening need to be expanded and the targets may need to be reconsidered.
* The “health service alliance” is a potential opportunity to build concrete eye care system, and it may request certain level of modification of the project.

1. Advocacy and documentation of the CRECM

* Policy advocacy activities need to be carried out at all levels, especially provincial level. Mass media campaigns can be conducted at provincial level to disseminate PBL concepts to the public and solicit public opinions. It is necessary to provide training on policy advocacy to the hospitals and FHF project team to further increase their capacity of advocacy.
* The policy constraints to vision center (VC) need to take into considerations for replication of the CRECM. It is wise to not include the component of VC if the policy constraints are not removed or the provincial association of VCs does not work. In that case, since the public hospitals are not only possible services providers to RE, some innovative strategies which building capacity of other services providers as well as broader collaborations among different providers might be worth to explore.
* The Cataract Surgical Outcome Monitoring (CSOM) needs to be upgraded if it will be an indispensable part of the CRECM. It might be also valuable to set up a project focusing on enhancing national information system for eye care through modifying and utilizing CSOM at national level.
* It will be perfect that FHF and the provincial prevention of blindness office jointly come up with a plan of replication in responding to the government’s need of implementation of the National Plan which is a very important opportunity for replication of the CRECM.
* The project should encourage all implementers to submit papers or writings of CRECM to relevant provincial, national and international seminars and conferences in order to increase influence of the CRECM. If possible the project could invite some key stakeholders of health and family planning commissions and hospitals from other prefectures of Yunnan or even other provinces to participate certain activities to introduce the experiences of the project.

# Introduction

## Project background

Yunnan is located in southwestern China, covering an area of 394,000 square kilometers of which 94% is mountainous or semi-mountainous. There are 16 prefectures (cities) and 129 counties (cities and districts) in the province[[1]](#footnote-1). The total population was 47.71 million in 2016, including 26.22 million rural populations. The per capita disposable income was 28,611 RMB for urban residents and 9,020 RMB for rural residents in 2016. Yunnan is the province in China has the largest number of poverty-stricken counties (73 counties in Yunnan out of 592 across China). [[2]](#footnote-2) The rural poor population in Yunnan reached 3.73 million in 2016[[3]](#footnote-3).

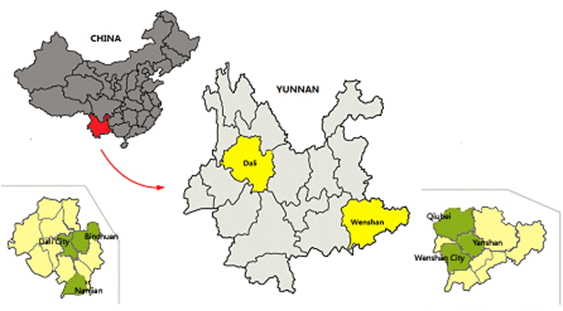
Seventeen percent of total blind people in the word live in China. The major causes of blindness include cataract, diabetic retinopathy (DR), and glaucoma and childhood eye disease. Refractive error (RE) is the leading cause of visual impairment. Under-corrected RE accounts for 90% of visual disability among rural children. The prevalence of diabetes among Chinese adults above age 18 is 9.7%[[4]](#footnote-4) and China has the biggest population of diabetes in the world. Around 20% of diabetes have DR problem[[5]](#footnote-5).

It is estimated that there are 1.5 million people age above 50 with blindness and visual impairment, 3.2 million diabetes and 0.58 million DR patients living in Yunnan. Around 20-30% of students in primary schools and 50-70% of students in middle and high schools are found with RE. Contrary to the demanding needs of eye care, capability of service delivery is weak, especially in rural areas. There are 513 eye doctors across the province and around 1/3 of them can perform cataract surgery, and the quality of surgery is still a concern. The cataract surgery is hardly accessible for people living in remote areas because available services are far way, road conditions are usually poor and cost of transportation is high. Professional optometry services are not available in most county public hospitals. There are less than 20 DR specialists in Yunnan, who are concentrated in provincial hospitals and a few prefectural hospitals. Community health workers (CHWs, refers to physicians in township hospitals, village and school clinics) lack awareness and have a low ability to deliver primary eye care (PEC) in the most rural areas[[6]](#footnote-6).

Fred Hollows Foundation (FHF) launched a 3-year pilot project “A Comprehensive Rural Eye Care Model in Yunnan Province-increasing access for disadvantaged groups to universal eye care” (the project) in April 2016. The total budget of the project is 1,195.160 USD. The project addresses 3 main causes of avoidable blindness, cataract, RE and DR in a comprehensive way. The objectives of the project include: (1) to strengthen the capacity of public health personnel to deliver quality, sustainable, comprehensive eye-care services; (2) to increase the availability and accessibility of integrated eye care services within the existing health system in pilot locations; (3) to generate data & evidence to inform eye health planning, improve quality of interventions and document the Comprehensive Rural Eye Care Model (CRECM); and (4) to strengthen provincial PBL, hospital management and civil society to advocate for policy development and replication of the CRECM in Yunnan and other provinces in China.

The project is implemented in 4 levels of public system from province (also as tertiary), prefecture, county and down to township/village in partnerships with Provincial Health and Family Planning Commission (PHFPC), the provincial PBL office as well as 7 public hospitals, including Yunnan Red Cross Hospital (YRCH), Affiliated Hospital of Dali University (AHDC), People’s Hospital of Wenshan Prefecture (Wenshan Hospital) , People’s Hospital of Binchuan County (Binchuan Hospital ), People’s Hospital of Nanjian County (Nanjian Hospital), People’s Hospital of Qiubei County (Qiubei Hospital) and People’s Hospital of Yanshan County (Yanshan Hospital).

Figure 1: Map of the project sites



Dali Prefecture is located in north-western Yunnan with a population of 3.61 million, of which ethnic (non-Han) minorities account for 51.84%. Dali is a typical agricultural state of which 93.4% is mountainous area. Among 12 counties (cities) of Dali, 8 are poverty-stricken counties including a project site Nanjian County. Nanjian has a total population of 0.22 million of which 88.3% are rural population. Mountainous area accounts for 99.3% of Nanjian’s land. Binchuan County, another project site is located in eastern Dali with a population of 0.36 million. Mountainous area accounts for 88.3% of territory of Binchuan (statistic in 2016)[[7]](#footnote-7).

Wenshan Prefecture is located in south-eastern Yunnan with a population of 3.61 million of which 62.8% are rural residents and 57.9% belong to non-Han ethnicities. About 97% of territory of Wenshan is mountains and semi-mountains (statistic in 2015)[[8]](#footnote-8). There are 8 counties (cities) in Wenshan and all of them are poverty-stricken counties. The project covers 2 counties in Wenshan, Qiubei County and Yanshan County. Qiubei County is located in northern Wenshan with population of 0.49 million of which rural population accounts for 88% and non-Han ethnic population makes up 62.3% (statistic in 2016)[[9]](#footnote-9). Yanshan County is half-hour driving from the capital city of Wenshan Prefecture with a population of 0.49 million of which non-Han ethnic population accounts for 65.1% (statistic in 2016)[[10]](#footnote-10).

# Methodology

## Evaluation purpose

FHF China team initiated the mid-term evaluation (the evaluation) in July aiming to get good understanding of progress of the project. According to FHF’s Terms of Reference (TOR, see Annex 1), the evaluation is expected to assess the progress towards the project’s purpose and objectives in consideration of the outcomes and outputs during the first 1.5 years of the project; to document lessons learnt and recommend any necessary changes that should be incorporated into the second half of the project.

We the evaluation team submit the evaluation report to the FHF project team. We anticipate that findings and recommendations of the evaluation will be shared to relevant stakeholders by FHF team. Necessary actions would be taken in order to achieve goal and objectives of the project. It will be helpful to report the key findings to authorities of local governments, health sectors, education sectors and other stakeholders as appropriate for advocacy purpose. The findings may also be helpful to share with FHF regional and HQ teams for project design modifications and management in the future.

## Evaluation scope and key questions

The objectives of the evaluation given by the FHF project team include:

EO1 an assessment of progress to-date against key objectives and planned outputs and outcomes as stated in the proposal regarding quality and effectiveness;

EO2 an assessment of project management to date including effectiveness of project partner coordination, implementation and reporting and project at all the levels involved;

EO3 an assessment of capacity building delivered to date from the perspective of both trainers and trainees;

EO4 an assessment of comprehensive eye care service set up and functioning with focus on screening mechanism referral system and vision center to date, and

EO5 an assessment of the likelihood of the project being sustainable and continuing independently by the end of the project (2019).

The evaluation questions given by FHF include:

1. How likely is the project to fulfill its purpose and objectives once it has been completed? What are the successful experience and lessons learnt which could inform the project achieve its purpose? (EO1)
2. How effective has the project management and coordination been to date? How satisfied are Partners with how the project has been implemented and management? (EO2)
3. To what extent has the project increased the capacity of the health facilities and health care professionals to deliver eye health services to people with cataracts, DR and RE?[EO3]

How effective is the cataract surgical outcomes monitoring system (CSOM) which has been set up? How could it be improved?

1. How effectively has the project supported the establishment of comprehensive eye care services in Dali prefecture, Wenshan prefecture, Binchuan county, Nanjian county, Yanshan county and Qiubei county? [EO4]

How effectively has the eye screening mechanism been set up and how well is it functioning? How effectively referral system has been set up and functioning? How effectively the vision center (VC) have been set up and functioning?

1. What could be changed to improve the likelihood that the eye care system the project has set up is sustainable after the project finishes? How could the project increase the commitment of members of the eye care system’s governance structures and leadership at provincial level?
2. How effectively is the project improving access to eye care services by disadvantaged groups and women?
3. How could the project improve the likelihood of the eye care model being replicated in other counties of Yunnan Province?

The evaluation covered 7 sites in Kunming, Dali, Wenshan, Nanjian, Binchuan, Qiubei and Yanshan. We intended to include participants from different sectors at provincial, prefecture (city), county, township and village level who have been involved in the project to some degree, such as officials of health and family planning commission (HFPC) and bureau of education (BOE), directors and physicians of the project hospitals, CHWs and school teachers.

## Approach

The evaluation adopted qualitative methods including literature review, semi-structured focus-group discussion, individual interview and observation. We used some participatory tools such as “ten seeds” and “scoring” to facilitate conversation in the interviewees and quantify comments of the interviewees.

The literatures reviewed are derived from two sources. One is the project documents and relevant project monitoring data provided by FHF. Another is the statistics and other documents issued by the governments at different levels as well as published papers.

The interviewees included health officials responsible for PBL at provincial, prefecture and county levels, officials of BOE at county and city level, FHF’s project team, project coordinators of the project management office and each project hospitals, technical experts of YRCH, directors of the project hospitals, heads, physicians and nurses of ophthalmology department or eye ear nose and throat (EENT) departments, physicians of endocrinology departments, CHWs and teachers. The interviewees at provincial, prefecture and county levels were recommended by FHF project team. CHWs and teachers were recommended by the project hospitals.

Arranged and accompanied by FHF Project Officer Ms. Wang Jing and Ms Shi Zhiping, we conducted fieldwork in Kunming, Xiaguan (capital city of Dali Prefecture), Nanjian, Binchuan, Wenshan, Qiubei and Yanshan during September 5-22 2017. At each site, we paid visits to the hospitals, and local HFPC, BOE, schools, township and village clinics if possible. An interview usually lasted for 20 minutes to about an hour according to the interviewees’ depth of involvement to the project. A total of 74 persons (42 females and 32 males) were interviewed. (See Annex 2 Fieldwork Schedule & Interviewee List and Annex 3 Interview Outline). The interviewees included different sectors at 4 levels, as shown in below Figure 2 and 3.

## Evaluation team

Ms. Cao Hong was team leader responsible for design and implementation of the evaluation as well as report writing. An assistant helped in taking notes for the interviews onsite, and collating and cleaning the transcripts afterwards.

## Limitations

The evaluation did not directly assess quality of the services provided by the trained professionals. However data of the CSOM system provides certain information to review quality of cataract surgeries. Users of eye care service were not involved in the evaluation therefore accessibility was not directly reviewed.

Owing to resources constrain and time limitation, some of the intended interviewees were not reached during the field visits. Alternatively we talked through phone to 2 interviewees. In spite of this, the principle of *information saturation* was followed during the field work.

## Ethical and other approvals obtained

Since the evaluation did not interview children and patients, no special approvals were requested. However, all interviews were conducted with the interviewees’ verbal informed consent. No photos of interviewees were taken by the evaluation team.

# Evaluation Findings

## Key evaluation question 1: How likely is the project to fulfil its purpose and objectives once it has been completed? What are the successful experience and lessons learnt which could inform the project achieve its purpose? (EO1)

In general, the planned project activities have been implemented on track. The targets of the most activities have been accomplished as planned to date, as table 1 shows. Impressively, completion rate of targets to capacity building training for endocrinologists and vision center‘s mangers reached 866.0% (targeted 50 and trained 433) and 733.3% (targeted 6 and trained 44) respectively. Since the DR screening and operation of the VC have met some difficulties which is presented in sections 4.1 and 4.3, the completion rates of these 2 activities were under 50% to date.

Table 1: Completion rate of targets for main activities

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| **Main Activities** | **Targets** | **Targets achieved** | **Completion rate** |
| Increase capacity of the technical support agency | 17 | 18 | 105.9% |
| increase capacity for service delivery at prefecture and county levels | 181 | 639 | 353.0% |
| Increase capacity for CHWs and school teachers | 1,370 | 1,236 | 90.2% |
| Provide essential technology | 23 | 23 | 100.0% |
| Conducted health promotion | 875,400 | 837,323 | 95.7% |
| Deliver screening | 330,000 | 136,406 | 41.3% |
| Procedures/standards development | 2 | 2 | 100.0% |
| Deliver Refractive Errors services | 19,000 | 8,387 | 44.1% |
| Deliver medical intervention | 248,050 | 201,186 | 81.1% |
| Build health financing | 21 | 7 | 33.3% |
| Document CRECM. | 13 | 10 | 76.9% |
| Build eye health information system | 14 | 14 | 100.0% |
| Strengthen government and stakeholders' leadership | 84 | 84 | 100.0% |

1.1 The project responding to local needs

As aforementioned in the project background, the 6 prefectural and county project sites are rural mountainous poor area in Yunnan where professional capacity of services delivery to respond needs of treating cataract, RE and DR were enormous insufficient, as indicated in the PDD. The evaluation defines local need accordingly in a general way as patients’ needs of services as well as capacity to deliver services to patients of cataract, RE and DR in the area of the project sites (prefectures and counties).

Most interviewed stakeholders showed great satisfaction with the project. To the question *“how appropriate the project strategies meet local need”*, we asked 36 interviewees who have some understanding of the project to score their assessment (scores range from 1 to 10, 1 means the worst and 10 mean the best). The results were impressive as showed in the Figure 4 below. Almost all the interviewees considered the project well met the local needs of patients as well as the ophthalmology departments and EENT departments of the project hospitals. “*The project contributes to comprehensive capability of eye care. The theory of design is very good*”, commented in the interview by an ophthalmologist of YRCH, and is also in the position of director of the provincial PBL office and has been involving in the Project from beginning of the Project planning. The interviewees were most satisfied with the capacity building project activities (More details are presented in section3).

We think that the project was well designed. The project is ambitious while the theory of change had a rational explanation for how the project would achieve the goal and the objectives. . The project is strictly in line with the National Prevention of Blindness (PBL) Plan and The FHF’s Strategy. A four pillars theory which involves strategies recommended by VISION2020 and also considers health financing, health information system strengthening as well as community participation are applied to the project. The 4 strategies of building capacity of health workforce, increasing service delivering, information and research and strengthening leadership and governance at different levels are well interlinked to ensure achievement of the overall goal. The design of the project answers needs of inadequate services for cataract surgery and RE in underdeveloped rural areas in Yunnan while also responding to emerging cause of blindness-DR in a comprehensive way by considering aspects of demanding, services providing and sustainable systems. The project also aims to make greater long-term impact in Yunnan and China by addressing evidence-based advocacy. It is almost an ideal ambitious design of a pilot project involving wild range of sectors and layers. Because of this, the project has encountered several challenges during the implementation. Most of the challenges have been listed in the project proposal and also been responded actively.

1.2 The experiences and the lessons learnt

The implementation of the project has generated valuable experiences and lessons. Even for policy constraint which may not be overcome during the duration of the project, the project has made meaningful exploration to identify obstacles and coping strategies. The below experiences and lessons learnt are obvious to us.

Firstly, the support of the YHFPC is fundamental factor for smooth implementation, sustainability and replication of the project and the provincial PBL office has played essential role in ensuring support of YHFPC. The provincial PBL office which is set up in YRCH is responsible for the fulfillment of PBL tasks under the leadership of the Medical and Administrative Department of YHFPC. FHF and the provincial PBL office have implemented the project in close partnership. The project management office is set up in YRCH. Actually the members of YRCH project management team and technical team are also key members of the provincial PBL office. Since YHFPC showed clear message of support through the provincial PBL office, the stakeholders at all levels gav*e “green light”* to the project. As the government imposed more strict management measures to INGOs in recent years, local governments and governmental departments usually tended cautious to implement foreign funded projects. As one official of the Medical and Administrative Department of YHFPC pointed out, *“the project can be implemented effectively with the provincial supports, particularly for INGOs who would face tremendous resistance without provincial participation. It is also easier for replication of the project with the government’s supports. The government can replicate the successful experiences across the province”*. He mentioned that FHF was the first and the only INGO to actively gain their supports.

Secondly, the horizontal project management structure appears to be more effective when the project is under management of 2 different systems of public hospitals and an INGO. In the first year of the project, FHF singed an overall agreement with YRCH, and then YRCH signed agreements with AHDU, Wenshan Hospital, Nanjian Hospital, Binchuan Hospital, Qiubei Hospital and Yanshan Hospital separately. The project management office in YRCH was supposed to take full responsibility of managing the 6 project hospitals, including reporting, fund transfer, logistic supports, technical training and mentoring, data collection, analysis and sharing and so forth. The intention of this centralized vertical management structure was to enhance networking and cooperation across the hospitals at provincial, prefecture and county levels. However, the structure did not work well due to the complicated procedures of finance management of YRCH. In addition, there were no full time staffs working for the project management office. The members of the managerial team and the technical team have their own responsibilities in YRCH, and they are always overloaded. As a result, reporting and finance transferring is often delayed. To respond to this issue, FHF and YRCH adjusted the structure to a horizontal way. In second year, FHF, YRCH and each of the 6 hospitals signed agreement among three parties. Under the new structure, FHF project team manages all the project hospitals directly. The horizontal project management structure functioned more effectively. The interviewees of the YRCH and the hospitals thought the current project management structure was *“more effective”*.

Thirdly, adjustments to response changing context are necessary in order to ensure smooth implementation of the project. The change of the project management structure is a good example. We also noticed that trust relationships among FHF project team and the partners and intensive follow-up by FHF project team were also key elements to make good changes.

Fourthly, the method of training on manual small incision cataract surgery (MSICS) which is combined with 3 months surgical training course at a tertiary centre and followed by hospital-based hands-on cataract surgical training in a local hospital appears effective in increasing trainees’ ability of performing cataract surgery in a short period of time. The trained interviewees said, attending the 3 months training course could learn in a *“systematic way”* and *“meet many cases of different eye diseases”* although they hardly have chances to perform a surgery. The hospital-based hands-on training provides plenty of opportunities for the trainees to perform surgeries under supervision of the trainers. This combination of cataract surgical trainings is especially suitable to those physicians who have basic knowledge and skills but incapable to perform surgery independently. On the other hand, this method is not ideal for hospitals which have provided PHACO, because the trainees would have a few opportunities to perform MSICS after their training. The county hospitals’ capabilities varied greatly, such as Yanshan Hospital has operated PHACO for a long time. We think that the project could consider more tailored trainings so that the project hospitals could maximize the benefits of costly trainings.

Fifthly, the annual planning process of the project involving all the project hospitals is a good way of bringing stakeholders to the same page.  *“The plan of the project is very clear which is better than other projects. Following the plan format, all implementers discussed the plan together at the project annual meeting. Therefore, everyone knew clearly what should be done in what timeframe”*, as the project coordinator of YRCH Ms. He and Ms. Gao pointed out.

The last but not the least, there are some specific experiences which the project hospitals have generated in the implementation of the project. The director of the ophthalmology department of Binchuan Hospital always provides a twenty-minute presentation on eye care for the students and the teachers before screening in the schools. AHDU usually assigns two professionals to provide health education and counseling when they carry out school-based screening. In Qiubei County, the EENT department gained impressive result by putting news of the eye screening on TV. Nanjian Hospital integrated eye screening into its regular outreach free diagnosis and treatment in communities. In fact almost all the project hospitals have taken any advantages of opportunities to provide the eye screening and the trainings, such as routine physical check for students by township hospitals, routine follow-up patients of chronic disease by CHWs. In Wenshan Hospital, a convenient channel is opened for the patients who visit the ophthalmology department with referral cards. Those patients enjoyed privilege of no registration fee and priority. In result, *“70%-80% of the referral patients came for examinations”*, the Head Nurse said.

## Key evaluation question 2: How effective has the project management and coordination been to date? (EO2)

2.1 Overall situation of the project management and coordination

The project is implemented in 4 levels of public system from province (also as tertiary), prefecture, county, and down to township/village. YRCH as tertiary level is responsible to coordinate and provide technical trainings and coaching to the 6 project hospitals at lower level. The 6 prefectural and county project hospitals are responsible to implement project activities in their areas and obtain supports from local relevant authorities.

The project management and coordination, among FHF, YRCH and the 6 project hospitals vertically as well as coordination among the hospitals and local stakeholders such as HFPC, BOE and schools, has been generally effective to date. The roles and responsibilities of FHF, YRCH and the 6 project hospitals were clearly specified in their annual agreements, including reporting procedure and finance management. In the interviews, the managers and coordinators at the provincial, prefecture and county levels showed clear understanding to their roles and responsibilities.

FHF team and the provincial PBL office have worked closely in managing the project. FHF team managed the implementation on a day-to-day basis, and the provincial PBL office provided official administrative supports following the procedures of the government. Local HFPCs of the most project sites have played an important role in coordinating the supports of the other sectors to the implementation of the project, such as the Bureau of Education (BOE) and township hospitals. The Dali Municipal HFPC and BOE jointly issued an official notice to schools to support school-based activities last year. This was also happened in Wenshan Prefecture, Nanjian County, Qiubei County and Yanshan County. The HFPCs of these places have provided timely coordination upon requests of the project hospitals as well, as an interviewed health official said *“providing supports in coordination when they meet difficulties”*. FHF has maintained intensive communication and follow-up with the 7 hospitals. An interviewee commented about the FHF project team, that *“they are hard working and responsible. They always keep an eye on tracing the plan so that we can reach what we are now.”* During our 2 weeks of the fieldwork, we also observed how devoted FHF project team was in facilitating smooth implementation of the project among different stakeholders. In the project hospitals, the presidents, the project coordinators and the directors of the ophthalmology departments or EENT departments were extremely crucial in gaining local supports to the project. Without their personal networks and influences, the eye screening in communities and schools would not be possible to obtain current achievement. As one doctor of Wenshan Hospital who involves in the Project mentioned, *“Although the HFPC and the BOE issued a notice to schools, which is helpful, but in the end we have to coordinate these sectors by ourselves. In fact we heavily rely on our personal relationships.”*

We asked the interviewees to assess their satisfaction to the project management and coordination by scoring. The average score given by the different stakeholders ranged from 7 to 9.7 (1 means the worst and 10 mean the best) which was also impressive (see Figure 5).

2.2 The issues and suggestions raised by the stakeholders

However some problems were raised in the interviews. The mechanism of communication and coordination among multi sectors at each level was not established. There were no formal channel for key players such as the BOE, the women’s foundation, the disabled people’s foundation (DPF) and town governments to meet together regularly or from time to time for information sharing and gaining supports. For the most cases, the coordination only happened when the hospitals needed approval or arrangement for the screening in communities and schools. As a result, the coordination among the hospitals and the other sectors was *“depending on personal relationships too much”*. This situation could cause some uncertainty to the implementation of the project, such as some schools did not accept screening in the schools. For outreach eye screening in townships on market day, the hospitals usually need to get the town governments’ assistance to arrange venue and community members’ participation. As a project coordinator pointed out, *“It is not easy for the hospitals to organize the screening activities. The community members are lack awareness of necessity of screening. They do not trust the hospitals. So the governments’ supports are needed. But the town governments’ supports are not strong enough*”.  *“It is better to get town governments or village committees ‘supports to the eye screening. Village doctors are not influential enough”*, another coordinator said.

Lacking enough flexibility of the project management regarding to setting targets, rescheduling and modifying some activities was commonly shared dissatisfaction by the interviewees. A risk of lacking reasonable flexibility of project management is that the frontier professionals of the hospitals may lose ownerships and motivations.

Difficulty of reimbursement was mentioned frequently. According to the agreements, the project hospitals needed to submit the E-version funding record with hospital’s chop to FHF every month although financial reporting and transferring are happened at quarterly basis. The request is necessary measure of quality finance management and fraud prevention. In reality, the hospitals often failed to meet the request because the hospitals’ reimbursement procedures were too complicated. To make things worse, *“FHF and the hospital have different requests of reimbursement. For some expenditure such as accommodation during the trainings, FHF approved reimbursable, but the hospital denied. It is extremely hard to negotiate with the hospital,”* as a coordinator said. They usually take weeks to complete reimbursement even for a small expenditure. *“We need to get five signatures of the hospital leaders to complete a single reimbursement. It is also hard to catch those leaders for their signatures. I have spent two weeks to get reimbursement for our last screening but still did not get it done.”* Since the ophthalmology departments or the EENT departments directly carried out project activities meanwhile under huge pressure of maintaining routine services, monthly reimbursement became heavy burden to them. They suggested that quarterly reimbursement including submitting the E-version funding record would be helpful. Or alternatively, some expenditure could be reimbursed directly by FHF. According to FHF, FHF financial staff was conducting regular financial monitoring as well as learning the difficulties of each hospital on finance. We also observed that FHF team was working on this issue during our field visit while FHF financial staffs met with the finance departments of the hospitals for solutions.

Some interviewees felt *“it was difficult to adjust budget and expenditure”* in responding to changes of the context. For instance,  *“balance of training in India was not possible to be spent to support other training or the screening which were short of money”*, or to *“cover partial medical cost for patients”*. The reasons of such impression may because the interviewees did not fully understand principals of adjustment of the project. The principals are that adjustments have to be made based on the actual situation and reasonable and related, according to FHF.

The interviewees mentioned that the meetings or trainings of the project have been too intensive. Sometimes they have to travel back and forth to attend different meetings with very short intervals. They suggested, *“better to combine such meetings and trainings since the participants for those meetings are usually same persons so that we don’t need to go and come and go again”* in a short period of time. This pressure will be reduced in next phase because the capacity building activities were concentrated in the first year according to the plan, as FHF project team pointed out.

Some interviewees raised that the request of screening plan was too detail to implement in reality. Because the targets of the screening have lagged behind, FHF asked each project hospital to come up with a detailed plan for the screening between September and December (clearly specify dates, places, implementers and numbers of people tending to reach etc.) recently. The interviewees said, for the most occasions the plan was not followed exactly because the hospitals would be impossible to predict how many people would show up for the screening. *“Right time and right seasons do matter to the screening”* as an interviewee pointed out. The screenings as well as other activities also may not be conducted as planned due to heavy workloads in the hospitals or competitive schedule of other stakeholders. For instance, the training for CHWs in Yanshan was delayed because the CHWs were busy to identify poor householders for the governmental *“precise poverty alleviation measures”*. The interviewees said, *“Planning is necessary but too detailed plan is not practical. We will carry out the screening once we have time. ”*

Another repeatedly mentioned issue was short notice of unforeseen tasks by FHF. *“We were asked to work out some unplanned work such as an extra plan or report immediately after receiving the message. But we did not have time to do it at that moment.”* For submitting documents, they suggested to give a notice at least two days ahead, a week even better. For attending meeting and receiving field visits, they preferred to be informed *“three weeks ahead, so that we can prepare in advance to avoid awkward situation.”* However, according to FHF project team, they usually notified their partners at least 3 days for responses. This different opinion among FHF and the hospitals may because of specificity of services of the hospitals.

## Key evaluation question 3: To what extent has the project increased the capacity of the health facilities and health care professionals to deliver eye health services to people with cataracts, DR and refractive error? (EO3)

3.1 The overall capability

The projects hospitals’ capacity of delivering cataract surgery, DR prevention and RE correction has been greatly increased after the implementation of the project, particularly for the county hospitals. Five more doctors were recruited by the ophthalmology department or the EENT departments of the 4 county hospitals. Nanjian Hospital set up the inpatient ward which was not available before. The 6 (exclusive YRCH) hospitals received more patients. For instance, the ophthalmology department of Binchuan Hospital receives 20 more inpatients and 200 more outpatients in average comparing with the past before the project started. Their ways of services delivery expanded from passively waiting for patients in the hospital only to reach-out screening. *“We waited patients to come in the past. Now we also go to rural areas for screening”.* To DR diagnosis and treatment, all the county hospitals obtained basic ability and the prefecture hospitals got better ability. One doctor of the endocrinology department of Wenshan Hospital said, *“We now initiate suggestion to patient to get DR check. In the past, we just followed patients’ request.”* For optometry service, all 4 county hospitals are capable to provide services now although the VCs are not started.

We asked the relevant interviewees at all levels to score comprehensive ability of service-delivering for eye care from 1 to 10 in order to quantify increased ability ( 1means the lowest ability and 10 mean the highest ability). The interviewees of AHDU assessed their average overall increment of ability by 0.6. The interviewees of Wenshan Hospital gave 8.5 to their current ability which was 1.5 more in comparison with the past. More impressive results were noticed in the county hospitals with an average of 1.7 increments FHF project team and the project management office of YRCH also have same impression(see figure 6&7below).

To ability of performing cataract surgery, DR diagnosis and treatment and optometry service, Nanjian Hospital, Binchuan Hospital and Qiubei Hospital obtained the most significant improvement in those 3 aspects. AHDU, Wenshan Hospital and Yanshan Hospital increased their ability mainly for DR diagnosis and treatment as well as optometry service. The scopes of increased capacity were various among the project hospitals, as Figure 8 and Table 2 show. These results were responsive to the project’s strategy of capacity building which emphases the county hospitals. However the original ability of these hospitals did matter. For instance, the EENT department of Yanshan Hospital has operated PHACO in the past, so increased capacity of cataract surgery tended to be obvious only to a couple of inexperienced doctors rather than the department as a whole.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 2: Sore for ability of service-delivering given by self-assessment | | | | | | |
|  | Performing CS | | DR prevention | | Optometry service | |
| Beginning | Now | Beginning | Now | Beginning | Now |
| AHDU | 9.0 | 9.0 | 7.3 | 8.7 | 8.0 | 8.3 |
| Wenshan Hospital | 9.5 | 9.5 | 6.5 | 8.5 | 9.0 | 9.5 |
| Nanjian Hospital | 5.5 | 7.8 | 3.8 | 6.5 | 3.5 | 6.3 |
| Binchuan Hospital | 5.3 | 7.3 | 2.8 | 5.7 | 0.7 | 5.0 |
| Qiubei Hospital | 7.3 | 9.3 | 6.7 | 8.3 | 3.7 | 8.0 |
| Yanshan Hospital | 7.8 | 8.5 | 3.0 | 6.5 | 5.5 | 6.5 |

The same method was used for the trained health professionals to score their progress of own ability. The results were also impressive. The 14 interviewed professionals who received the trainings assessed their comprehensive ability of providing eye care increasing from 5.3 to 8.0.

3.2 The capacity of performing cataract surgery

The trained doctors’ ability and confidence in performing cataract surgeries were improved. The average score for the 6 interviewed doctors trained on cataract surgery raised from 6.7 at the beginning of the project to 8.5 now. These trained doctors said that their postoperative patients have fewer complications and better visual acuity (VA).  *“My way of performing MSICS was not standardized in the past. After the training which was systematic and standardized I made progress in details and treatment of complications. My patients have lighter postoperative reactions and better VA”*, one doctor of Qiubei Hospital said. One doctor of Binchuan Hospital also mentioned, *“My improvement is great. In the past my operations sometimes had complications. After I received the training none complication occurred. “*His colleague, a chief nurse commented to this doctor’s progress *“He is more confident to his ability of performing MSICS after the training. He assesses patient in more comprehensive way.”* The technical team of YRCH also noticed increased capacity of the doctors who received the trainings. One trainer doctor of YRCH who used to provide hospital based MSICS training, assessed those trained doctors’ average ability of performing cataract surgery 6.5 at beginning of the project and 8 now, *“they obtained rapid progress to their skills. They could barely performed operation at the beginning and now can perform proficiently and safely. There are fewer postoperative complications happened and they can deal with complications independently.”*

Data of the cataract surgical outcomes monitoring system (CSOM) provides supportive evidence of improved capacity of the project hospitals as well, as figure 9 shows (data for Yanshan Hospital in Aug 2016 was not available because the project trained doctors had not perform surgeries at that time).

3.3 The capacity of DR and optometry

The professionals’ ability of DR diagnosis and treatment was also increased. For the hospitals which had provided fundus photography before the project, such as AHDU and Wenshan Hospital, *“the junior doctors’ ability to diagnose DR is in progress”*, “*got clear understanding of requests of photographing environment and of focusing”*, *“I could find out abnormal in the past while now I also can provide some suggestions”,*  some of the interviewees said. For the hospitals such as Nanjian Hospital, they started DR services from scratch after the start of the project and now *“can take fundus photography and simple diagnosis.”* The interviewed 10 doctors who took part in the DR trainings assessed their increment of ability from average 5.0 in the beginning of the project to 7.5 at the present. One of the DR trainers of YRCH scored 5 in the beginning and 7 now for the trainees of the prefectural hospitals, 0.5 and 4.5 for the trainees of the county hospitals. She pointed out *“usually when an ophthalmology department develops to a very good level then DR would be addressed. The county level hospitals have weak basis and now they already obtained basic ability of taking fundus photography and diagnose the pictures of fundus. But their judgement were not guaranteed ”*

It was most obvious that the professionals’ ability of optometry increased rapidly, especially for those from the county hospitals, since none of the hospitals had this service before the project started. The 9 interviewed professionals who received the training on optometry scored their ability from 2.9 in the beginning to 5.2 at the present. They are capable to start services because *“they already have basic necessary ability”* as one of the optometry trainers of YRCH commented, although they need more practice to become skilful. She thought that their ability for optometry grown from “zero-base” to 8 at the present.

3.4 The ability of the CHWs

The CHWs’ ability increased as well. The 13 interviewed CHWs measured their ability of providing primary eye care (PEC) from 4.4 before the start of the project to 7.4 at the present. An interviewed CHW said *“I did not know hypertension and diabetes could cause eye disease before the training”*. The interviewees at different levels agreed that CHWs have made progresses, as Figure 10 shows. The interviewees of the county hospitals mentioned, *“The CHWs made progress to their awareness to some eye diseases”*, *“improved ability of the CHWs was solely resulted from the project. ”* Nevertheless, the interviewed CHWs did not show enough confidence to carry out the eye screening. The CHWs said they need more training, *“more practices and more details”*. Several interviewed CHWs indicated *“We could learn quickly by practice*”. Since the CHWs could hardly understand all contents in half-day or one-day training, as a CHW said “*the one-day training covered contents of this book (PEH handbook). It was too much for us”*, it will be more effective to provide a series of short trainings on specific topics in a period of time rather than one-off training.

All interviewees showed great satisfaction to the capacity building which was their most favourable part of the project, as indicated by a head of an EENT department *“the best of the project is that our technical ability increased.”* They also hope to invite international experts to provide on-site mentoring in next phase, because *“those experts can give technical advices and also bring new concepts and spirit of devotion here.”*

3.5 The cataract surgical outcomes monitoring system (CSOM)

The CSOM was utilized by the 6 hospitals in the prefectures and the counties, as the request of the project. Data of the CSOM has been regularly collected by FHF team and analyzed mainly for the purpose of reporting rather than a tool for monitoring and improving quality of cataract surgery. Most of doctors interviewed agreed that the CSOM was helpful if it was truly used, because, as some interviewed doctors said, *“It is useful for me for patient follow-up. It is a good tool for improving my ability of performing cataract surgery by keeping systematic records which can be used by doctors to summarize experience”*, *“very helpful in follow-up patients after their surgeries”* and *“can directly review results of the surgeries you performed”*. However, most of the relevant interviewees actually did not use the CSOM except a couple of them looking at their records from time to time. Most commonly shared opinions about the CSOM included *“adding too much workload”*, *“not sustainable”*, *“won’t use it after the project finish”*.

The CSOM did not function well in the project hospitals mainly because of three key obstacles. Firstly, a national reporting system of cataract surgery is used by all the project hospitals. The national system has *“similar functions with the CSOM, but is not detailed and has no analysis function such as the CSOM”*, and *“mainly for cataract surgery rate calculation”*. Since the CSOM and the national reporting system do not integrated, the hospitals have to bare certain duplication of work. In addition the CSOM requests more detailed information of follow up. So the project hospitals faced more workload by using the CSOM even only for reporting purpose. Secondly, the ophthalmology department or the EENT departments of all the project hospitals were seriously short of human resource. Since the professionals have to attend capacity building trainings, visits, meetings and so forth frequently, their shortage of manpower has become worse. All the project hospitals felt exhausted by maintaining routine services while keeping project activities on track. Thirdly, the CSOM itself has some practical problems which constrain its usage. For instance, *“data cannot be entered into the system for some patients whose vision could not reach above one due to fundus diseases, or patients who stayed in hospital over 7 days for 2 surgeries for both eyes”*, *“some patients could not clearly indicated their visions, so it was hard to exam their vision on the second day of the surgery sometimes”*, and *“the data of the patients age between 18-20 were not accepted by the system.”* Because of those reasons, *“it is unlikely that the CSOM would be continually used after the project finish”,* if these shortages of the software are not overcome.

We could suggest improving the CSOM through two ways. For long term replication, the CSOM needs to be upgraded to make it matching the national cataract surgery reporting system. It means that the data of CSOM could be automatically transferred into the national system. Meanwhile those practical issues of the CSOM, such as strict condition of data entering need to be fixed. Alternatively, the CSOM can be used as a compulsory training tool for the trainees to monitor their improvement.

## Key evaluation question 4: How effectively has the project supported the establishment of comprehensive eye care services in Dali prefecture, Wenshan prefecture, Binchuan county, Nanjian county, Yanshan county and Qiubei county? (EO4)

4.1 The eye screening mechanism

It is fair to say that certain mechanism of the eye screening has been set up in each project site. The mechanisms functioned but not institutionalised. The eye screening has been carried out by the six project hospitals and intensified in recent months. We noticed that every hospital conducted the screening in communities or schools during our field visits. Generally the local health and education authorities provided sound supports and coordination to the screening through both formal ways (such as issuing official notices) and informal ways (such as phone calls). With such overall supports, the main tasks of coordination have relied on the presidents of the hospitals as well as the directors of the ophthalmology departments or EENT, and the project coordinator.

There were some commonly shared difficulties to implementation of the eye screening. The interviewees at all levels thought that the targets of DR screening was the most difficult to accomplish. Some constraints and obstacles were explored in the interviews. Firstly, diabetes patients in communities did not come for screening although they have received notices from the CHWs or the doctors of the hospitals beforehand. In Yanshan, *“less than 50% of the patients who received notices came to the screening every time.”* In Binchuan only half of patients came at the best occasion. In Dali, *“for one occasion we called more than 200 patients for the screening but finally only 30 of them came.”* The DR patients are usually older people who *“were not aware of DR”.* To make things worse, those patients who live in rural mountainous areas have to travel hours to the towns where the screening usually happens, *“in some towns we went, the patients have to ride horse to the town”* Dr. Peng of Qiubei Hospital mentioned in the interview. Since majority of young people left home for work, the old people hardly visited town without companions. In result, *“not many people came to the screening even it was free of charge.”* So the numbers of patients reached by the screening were much lower than expectations.

Secondly, the DR screening was time consuming particularly for the 4 county hospitals. The county hospitals did not have any experience of taking fundus photography before start of the project except Qiubei Hospital (they have one fundus camera but only one doctor could use it through self-study). As the DR trainer Dr. Wu pointed out, *“fundus photography requests good technical skills and good equipments”.* It usually takes plenty of practices and long time for a professional to become skilful after training. For these newly trained professionals they usually spent longer time to get one clear photo for a patient. It has also happened that the persons received the training may not be the one to carry out DR screening due to hospital schedule, according to FHF project team. Because the portable fundus camera is used by the screening to find patients who need further examination in the hospital, “*the quality of the photo taken by the portable fundus camera was not good enough”*, “*only the later stage of DR could be fund* ”, a couple of the interviewees said. Moreover, the hospitals need to send the fundus photos to YRCH for grading. The process was also taken time because *“the internet and software often did not work”*. Good thing is, the problem caused by poor internet connection could be solved by an off-line version which was available since May according to FHF project team.

Thirdly, constrained by the shortage of human resource the ophthalmology departments or the EENT departments were impossible to reach out to villages or pay home visits. *“We assign eight staffs to conduct the screening each time”,* a doctor indicated. It means that the ophthalmology department or the EENT departments would not be possible to provide more intense screening only for accomplishment of the assigned targets of the screening. In fact, it will not serve the purpose of the project if the hospitals invest more resource to the screening at the cost of compromising quality and scales of their routine services.

Fourthly, the targets of the DR screening appeared beyond reaching although the hospitals have tried their best to date. For instance, there are around 2300 diabetes patients who are followed up by the Basic Public Health Service Equalization Scheme (BPHSES) in Nanjian (diabetes is one of the 4 chronic diseases under management of this scheme). The targets of the DR screening for Nanjian Hospital is 2500. Although FHF’s project team confirmed that the unit of the target could be “*person”* as well *“person-time”*, because it*“is calculated as person. But it can be repeatedly screened after certain period of time depends on the primary result from first time screening, some can be screened once again after 6 months, some 3 months and some after 1 year”* (the project hospitals have some misunderstanding to this before), almost all hospitals anticipated that they would not reach the targets because the aforementioned difficulties seems unlikely to be overcome in the period of the project.

The last, the county hospitals can only provide referral rather than treatment after diagnosis of the DR patients. In addition, the coordination and the arrangement of the community-based DR screening were more difficult than the school-based screening. In consequence, motivations of the professionals to carry out the DR screening were not as strong as to cataract and other eye diseases screening which directly resulted in increment of their patients.

It is worth to aware that FHF team, YRCH and all the 6 hospitals in prefectures and counties have tried many ways to reach more patients. The ophthalmology department of Binchuan Hospital assigned a physician responsible for catching patients in the hospital. He brings the portable fundus camera to the endocrinology department every day at his any availability. YRCH started the DR screening although there was no plan in the original proposal. YRCH and FHF used to have an idea to let the CHWs to take fundus photo, but it was not practical because of lacking ability of the CHWs. And also, for those hospitals only have one portable fundus camera they need to keep the equipment in the hospital for services.

To respond this situation, some changes may need to make in order to ensure accomplishment of the targets. The DR screening beyond the 4 project counties may be necessary. AHDU and Wenshan Hospital could conduct the screening in other counties in the regions with coordination of local government offices as well as HFPCs. If possible, the county hospitals could also reach out to their neighbour counties. The project may need to address the DR screening in prefectural and provincial hospitals where diabetes patients usually were concentrated. It is also a possibility to equip certain township hospitals with portable cameras and intensive training so that they could carry out the screening. Since township hospitals are responsible to chronic patients follow-up into which the DR screening could be integrated. FHF team and the project management office of YRCH need to bear in mind that possible need of project extension or reducing the targets of the DR. If no breakthrough would happen in next half year, it would be reasonable to arrange extension of the project. It might be also necessary to reset realistic targets at the point when the current targets still beyond attainable even all the stake holders have tried every possibility.

To school-based screening, the most interviewees thought it was easier to organize comparing with the screening in communities. FHF and YRCH have tried very hard to push that the provincial HFPC, BOE and DPF would jointly issue a notice to support the school-based screening. It was not successful yet at time when the evaluation happened, because the provincial BOE was cautious about any school-based activities. The local BOEs appeared more open and they together with the local HFPCs issued official notices to schools for the screening. However, there is a risk to school-based screening. The BOEs and schools are very cautious about any commercial activity. They are also sensitive to any promotion activity under name of none-profit. As one official of Binchuan BOE said, *“we support this project because it is for* *philanthropic purpose. We are afraid that the activities are suspected as commercial intentions very much.”*  The screening for students itself is pure philanthropy. However prescribing spectacles has a certain level of duality. Wearing spectacles is a treatment for RE but spectacles are commodity rather than medical instruments under the current policies. So it is easily drawn suspicion if the professionals refer students with RE to get spectacles, even they do not mention the hospitals’ VC. We met a case during the fieldwork in Dali. One of the project hospitals has to call off the screening in a middle school because a parent of student complained to the local BOE, saying the screening was for commercial purpose.

The hospitals have employed some good strategies in order to avoid such misunderstanding, including providing eye care education at same time with the eye screening, just giving suggestion of prescribing spectacles rather than referring services providers. Nevertheless, one purpose of the screening is to increase demanding to the services. It is almost unavoidable to refer students with RE to the VCs of the hospital in the future. Therefore, the VCs need to think about strategies of articulating feature of philanthropy in addition to the quality and comprehensive services. We think that the VCs should give certain portion of earning to provide subsidies to poor students’ spectacles.

All the hospitals were busy to catch up the gaps of the targets of the screening during our field visits. The numbers of their patients have greatly increased. But they usually did not have extra energy to analysis the data and provide close follow-up. In result, some patients who were identified by the screening were lost. So the increased numbers of patients were not responded the increased number of the screenings proportionally. Currently all the hospitals have not established a sustainable mechanism to motivate physicians to conduct the screenings.

4.2 The referral mechanism

The referral mechanism among different departments in each project hospital has been established usually at the management’s request.  *“The patients referred to the EENT department by other departments would* *adhere for the most cases”*, Deputy-director Mr. Chen of Yanshan Hospital said in the interview. The situation of internal referral in the other project hospitals was similar with Yanshan Hospital.

The referral from CHWs to the county hospitals, form the county hospitals to the higher level hospitals have happened in its own way, mainly *“relied on the social medical insurance”*. The project did not invest to build referral system because of sustainable consideration. Instead, the project produced referral cards to assist the referral within and among the hospitals. FHF project team thought that effective referral was very important and affected by many other factors, such as incentives to the professionals at different levels, patients ‘awareness and policies. Considering tense doctor-patient relationship in recent years in China, *“the referral of any kind of disease is difficult because the physicians are impossible to refer patients compulsorily. The Patients decide where they want to go”* as a doctor said.

4.3 The VCs

The 4 county hospitals were ready to open VCs but the official approvals have been suspended because of the policy constraints. Wenshan Hospital‘s VC which has been operated before the start of the project were also called off recently. It has been a grey-area if public hospital was legitimated to run a VC for many years. In result, some hospitals have run VCs with official approvals in some places but in some other places this has not been allowed. China government has imposed stronger measure of governance accordance with law recently. Since there is no specific law to refer to, the project hospitals’ applications of opening the VCs have been denied. In the processes of the applications, the local HFPCs have consulted with relevant governmental departments. According to the interviewed officials of local HFPCs, optometry was on the list of Service Price for Yunnan Provincial None-profit Medical Facilities which was issued by Yunnan Provincial Commission of Development and Reform in 2005. But prescribing spectacles was not on that list because spectacles were commodity. Meanwhile, public hospital is also not allowed to register company since the hospital is public property.

This policy constraint seems unlikely to be removed in the duration of the project. It is good to know that YRCH is planning to open a provincial association of VCs which could be umbrella of the VCs of the county hospitals. According to FHF project team, the plan was promise because it was approved by the provincial government as a special case.

## Key evaluation question 5: What could be changed to improve the likelihood that the eye care system the project has set up is sustainable after the project finishes?

The project obtained good potential for sustainability according to the interviewees’ assessments, as showed in the Figure 11. The scores that the interviewees gave to the sustainability of the project were impressively high. The lowest score was 7.5 (1 means the poorest sustainability and 10 mean the best). The interviewees showed great confidences to carry out services of cataract surgery, DR and optometry since these services have become *“routine services”.* They also said that the eye screening would be carried out in a way of less frequent, together with the hospitals’ free diagnosis and treatment outreach activities or at the doctors ’ available time.

The following factors also contributed to the potential sustainability of the project. The first, the interviewed health officials at prefectural and county levels were fully aware of the project in great details. They have supported implementation of the project by providing coordination as necessary and issuing official documents as aforementioned. The interviewed health officials hoped thatthe project can cover more sites, or *“the project can provide suggestions and mentoring to other county hospitals beyond the project sites.”*

The next, all 6 project hospitals have plans of development for the ophthalmology departments or the EENT departments, and 5 out of 6 have written plans. The hospitals are regarded the ophthalmology and EENT departments as one of the hospitals’ highlights. The ophthalmology departments aim to grow capability of expanding services, such as PHACO and stronger DR diagnosis and treatment. The EENT departments aim to establish ophthalmology departments. However, almost all the hospitals have constrained by lack of qualified human resource. They have difficulties to recruit enough physicians holding qualification certificates.

Furthermore, the progress of establishment of *“health service alliance”* enables the county hospitals to better mobilize resources of township hospitals and CHWs. The *“health service alliance”, also refer as* the integrated health care services system in which county-level health facilities take the lead, township hospitals act as hub and village clinics function as the foundation. Once such alliances are set up, the county hospitals can manage and coordinate supports to the community-based eye care screening easier while they can also provide stronger supports to the CHWs to provide PEC. It means that the eye care screening in communities can become available routine services at township hospitals and village clinics. As indicated by the interviewees, Binchuan Hospital may mange 10 township hospitals; Yanshan Hospitals may manage 6 township hospitals.

Nevertheless, the project may need to make some changes in order to consolidate the sustainability of the project. For instance, once the “health service alliance” is established, the project may need to adjust resource to support the hospitals to provide intensive trainings to CHWs. And some necessary equipment may be provided to some qualified township hospitals. At each project site, the progress reports or newsletters should be regularly shared with the key stakeholders. In fact, the interviewed health officials of Dali HFPC and Wenshan HFPC already indicated their hope of timely reporting and information sharing. The interviewed officials of BOEs showed welcome to the school-based activities while also expressed the need of effective communication about the progresses and results of the screening, they said *“the project should have a summative feedback to us so that we would have better understanding”*, *“local HFPC should communicate with BOE for coordination every year, at least sending a letter”, “ an implementation plan of the screening is needed, and timely feedback of the results should be communicated with us once the work are done. ”* It is also important to provide eye care health education together with the screening because it can better raise awareness of students and teachers and also a way to show philanthropy of the project. In addition, advocacy activities focus on local government officials may need to continually address. The project has implemented some advocacy activities such as study tour targeting officials of HFPC and managerial staffs of the project hospitals, but not for the local government officials whose awareness and supports to PBL are even more powerful. As Mr. Liu Qian of Wenshan HFP suggested, *“there is a need to raise the government officials’ awareness of the project so that the project would implement more smoothly. It is better for the provincial PBL office or FHF to report to the office of government by sending newsletters regularly. ”*

## Key evaluation question 6: How effectively is the project improving access to eye care services by disadvantaged groups and women?

The project has reached disadvantaged groups and women by delivering the eye screening in rural areas, organizing public education of eye care on Women’s Day. FHF also introduced its policies of gender equity, disability inclusion and child protection at the project management meetings and encouraged the hospitals to pay special attention to improve access to women. Gender-related data has been generated since the beginning of the project. But there is still *“a lot of poor people in very remote poor mountainous areas were not reached by the screening”*, as a doctor indicated.

These approaches might help the key stakeholders to aware the need of serving eye care to disadvantaged groups and women in a way. But no evidence was showed in the interviews that special mechanism or consideration of providing assistance to the targeted groups to access the service were in place in all project hospitals. FHF project team defined disadvantaged groups as *“people living in rural and remote areas, women, ethnic groups, aged people, students and diabetes”*. Such definition was too vague and yet not reflected by other stakeholders in the interviews.

Most interviewees identified that old people without children’s care or living in very remote mountains and poor people were the most disadvantaged groups. These groups hardly accessed eye care services. Currently under the national policy of *“precise poverty alleviation”*, re-identifying rural poor households are undergoing in Yunnan. For those officially identified poor households( registered poor household), they would enjoy more governmental medical subsidies from the social medical instance, such as no admission fee for inpatient, 5% more reimbursement. However, till some poor people and some cost of DR outpatients, such as laser treatment were not covered. Even for the registered households, they would only get benefit when they visit the hospitals. Their obstacles of accessing hospital-based eye care services, such as lacking transportation and companion would not be removed. Therefore, some interviewees suggested that a relief fund might be helpful for those who were overlooked by the social medical insurance and the policy of *“precise poverty alleviation”*.

## Key evaluation question 7: How could the project improve the likelihood of the eye care model being replicated in other counties of Yunnan Province?

The CRECM which is under development of the project has great potential to be replicated in Yunnan. First of all, the official of PHFPC showed very positive perception of the project as well as willingness to expand the CRECM or successful experience. With the supports of PHFPC, almost all main project activities have been arranged by the provincial PBL office. It is reasonable to believe that such close partnership with the provincial health authorities has built solid ground for replication of the CRECM.

Then the CRECM itself is valuable because it responds urgent need of implementing the Thirteen Five-year National Plan of Eye Health (2016-2020) (the National Plan) which addresses network building, prevention of blindness caused by cataract, DR and RE, information system building and so forth. This pilot CRECM is unique and innovative by adding component of the DR prevention at county level, as Ms. Wu pointed out *“it is the first time that DR screening and treatment is integrated into a blindness prevention project”*. Currently the National Plan does not have a practicable implementation plan and no mature experience of the DR prevention to refer to. One official of PHFPC explicitly said *“If the project could provide some evidences, such as prevalence and effectiveness of the experiences, we are willing to promote (the model) upon necessity. It is in line with the National Plan. The experience drawn from the project will be very helpful for us. ”* He also expressed hope that FHF could expand the project to other places in Yunnan. However, it is important to be aware that the component of VC should be included in the package of the CRCEM for replication unless the policy constraints removed, or the approach of establishing the provincial alliance of VCs works.

However, we noticed in the interviews that the progresses of the projects were not regularly shared with the provincial key stakeholders, including PHFPC. Actually FHF composes organizational quarterly report to relevant authorities but the newsletters were about overall works of FHF rather than the project focused.

It may help to future replication that newsletters focusing on the pilot CREM are composed and regularly shared with PHFPC and other key stakeholders such as provincial BOE and DPF. Since FHF is under supervision of two departments of PHFPC, the Medical and Administrative Department and the Cooperative and Communication Department. It is better for FHF to take more active actions to report to these two departments simultaneous. Mr. Yang of the Medical and Administrative Department suggested that the progress report of the project should be regularly submitted to them at a half-year basis, and “n*eeds of our support should be presented in the report”*.

The partnership between FHF and the provincial PBL office need to be further consolidated since this office holds irreplaceable role in replication of the CRECM in the future. It will be perfect that FHF and the provincial PBL office jointly comes up with a plan of replication at this stage when the government’s need of implementation of the National Plan is a very important opportunity for replication of the CRECM.

It will increase influence of the CRECM to invite some key stakeholders of HFPCs and hospitals from other prefectures of Yunnan or even other provinces to participate project annual meetings. Meanwhile, the project should encourage all implementers to submit papers or writings of the CRECM to relevant provincial, national and international seminars and conferences.

In addition, policy advocacy activities need to be carried out at all levels. It is necessary to provide further capacity training on policy advocacy to the hospitals and FHF team although a training workshop was conducted in August, since effective advocacy requests careful planning and regularly monitoring. At provincial level, the project may consider to conduct mass media campaigns to disseminate PBL concepts to the public and solicit public opinions which bring about positive social environment for policy change.

# Conclusions and Recommendations

Based on the evaluation findings, we draw the following conclusions.

The project was well designed and greatly responded to the local needs. FHF team and the project management office of YRCH managed the project carefully with intensive follow-up and supports. The current horizontal project management structure has functioned effectively. The key stakeholders were satisfied with the project management and coordination. The most planned project activities have been implemented on track and the targets have been accomplished to date except the DR screening and operation of the VCs.

The local capability of the county hospitals as well as the trained professionals to deliver eye care services have been greatly increased, particularly for cataract surgery, DR diagnosis and RE correction. The CHWs ability increased as well. The capacity building activities were regarded as the best part of the project by the key stakeholders.

The mechanism of the eye screening has been set up although not institutionalised at each site. The DR screening in communities faced some obstacles. The referral mechanism functioned in each project hospital but not among the CHWs and the hospitals at different levels. The VCs were not operated due to policy constraints. Fortunately all key stakeholders have devoted to work out solutions to these problems. And the comprehensive eye care service would be further improved after establishment of the *“health service alliance”* in each county as well as the provincial alliance of VCs.

The project has obtained great potential of sustainability at each site and solid foundation of replication in Yunnan.

The implementation of the project has generated some successful experiences and lessons leant. Firstly the support of the YHFPC is fundamental factor for smooth implementation, sustainability and replication of the project. The partnership between FHF and provincial PBL office played key role in sustaining such supports. Secondly, the horizontal project management structure tends to be more effective for the project under management of two different systems. Thirdly, adjustments to respond to changing context are necessary in order to ensure smooth implementation of the project. Fourthly, the trust relationship among FHF and other stakeholders and FHF project team’s intensive follow-up are key elements to ensure achievement of the project. Fifthly, the method of training MSICS combined with surgical training course at tertiary centre and hospital-based hands-on training in local hospital appears effective in increasing trainees’ ability of performing cataract surgery in short period of time. Sixthly, the annual planning process of the project involving all the project hospitals is a good way of bringing stakeholders to the same page. The last, some specific experiences such as providing PEC education together with the eye screening in the schools, integrating the eye screening into routine physical check for students and follow-up patients, are valuable to be shared.

The recommendations include:

1. Project Management and Communication

* Regular communication among the key stakeholders at provincial, prefecture and county level need to be addressed. The progress reports or the project newsletters also need to be shared regularly with the officials of the health and education departments and the schools at the least.
* In order to achieve the goal and objective of the project, it is needed to have certain level of flexibility of adjustment at implementation level. This is extremely important to this project because it has involved multi sectors at multi levels, and the context has continually changing.

1. Considering specificity of the project hospitals’ work, it might be helpful for FHF project team to inform the local implementers early as possible so that they have longer time of preparation when meetings, trainings and unplanned work happen. Project implementation

* Specific measures are needed to assist the disadvantaged groups and women to access the eye care services. A clear and shared definition about the targeted groups would be helpful to identify sensitive measures. It will be also helpful to provide some subsidies to poor patients, students and women.
* For building capacity of CHWs, it will be more effective to provide a series of short trainings on specific topics in a period of time. The training employing a plenty of practices will help CHWs to learn better.
* The strategies of the DR screening need to be expanded and the targets may need to be reconsidered.
* The “health service alliance” is a penitential opportunity to build concrete eye care system, and it may request certain level of modification of the project.

1. Advocacy and documentation of the CRECM

* Policy advocacy activities need to be carried out at all levels, especially provincial level. Mass media campaigns can be conducted at provincial level to disseminate PBL concepts to the public and solicit public opinions. It is necessary to provide training on policy advocacy to the hospitals and FHF project team to further increase their capacity of advocacy.
* The policy constraints to VC need to take into considerations for replication of the CRECM. It is wise to not include the component of VC if the policy constraints are not removed or the provincial association of VCs does not work. In that case, since the public hospitals are not only possible services providers to RE, some innovative strategies which building capacity of other services providers as well as broader collaborations among different providers might be worth to explore.
* The CSOM needs to be upgraded if it will be an indispensable part of the CRECM. It might be also valuable to set up a project focusing on enhancing national information system for eye care through modifying and utilizing CSOM at national level.
* It will be perfect that FHF and the provincial PBL office jointly comes up with a plan of replication in responding to the government’s need of implementation of the National Plan which is a very important opportunity for replication of the CRECM.
* The project should encourage all implementers to submit papers or writings of CRECM to relevant provincial, national and international seminars and conferences in order to increase influence of the CRECM. If possible the project could invite some key stakeholders of HFPCs and hospitals from other prefectures of Yunnan or even other provinces to participate certain activities to introduce the experiences of the project.

# Additional Resources

None

# References

None

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| Thank you | |
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