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**Maternal Health Care in Rural China:
a Health Systems Perspective**



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1 INTRODUCTION

In rural China, most women pay user fees for maternal health care services. In addition, other factors such as the decline of the Cooperative Medical System, inadequate financial support for maternal health care provision from government at all levels and the decentralization of management responsibilities have influenced the quality of maternal health care being provided. Thus, rural women's access to maternal health care is hampered by two factors: the costs of care and the quality of care.

The CHIMACA Project (Structural hindrances to and promoters of good maternal care in Rural China) aims to strengthen and improve the performance of health care system in rural China to improve maternal and child health. It will provide policy-makers and health service managers with evidence for the development of informed policy on MCH. In a community based controlled trial, maternal health care services will be added to the New Cooperative Medical Scheme (NCMS) and training will be given to health care providers in three provinces. The project is divided into 4 phases: phase 1 involves the preparation, phase 2 is the situation analysis, phase 3 is the intervention planning and design, and phase 4 includes the intervention implementation, evaluation and monitoring.

The health systems study is part of the situation analysis. The objectives of the health system study are to:

- establish a pre-intervention baseline of the existing maternal health care system and process indicators;
- provide detailed information from the study provinces which is lacking from the situation analysis;
- facilitate development of the final intervention design and contribute to establish indicators for process evaluation of the intervention and;
- open a dialogue with the study sites to introduce the forthcoming intervention.

This report firstly describes the methods of the study. It then goes on to summarise the findings from the three province health systems study reports. Only the data from the qualitative study is described in this report. There were problems in the collection of the quantitative data. It was difficult to verify the validity and reliability of the quantitative data collected and is therefore not included in this report. The report draws out some key issues about the health systems which influence maternal health care. Key points for the design of the CHIMACA intervention are then detailed. Lessons learned from conducting this study are described to help with the design and implementation of the evaluation of the project. Finally, suggestions for the indicators for the process evaluation are listed.

2 METHODS

2.1 Study sites

Two provinces and one municipality were selected for the study: Anhui in the central-east of China and Shaan'xi and Chongqing in western China. Two counties in each province (6 in total) were chosen using the following criteria: number of townships, local support for the project, NCMS currently being implemented or will be implemented soon, socio-economic status and maternal and infant health indicators. The counties were: Zhen'an and Lantian in Shaan'xi province, Fanchang and Xuancheng in Anhui province and Rongchang and Tongliang in Chongqing municipality.

2.2 Research teams

Each province had a research team. They consisted of professors, lecturers, teachers, and PhD or master students. The investigators have experience in carrying out research projects in rural areas and working with local authorities. Their research experience has been mainly with quantitative methods of data collection. There was limited experience in qualitative investigations.

2.3 Training

Before carrying out the health system study, the research team received training on the study protocol, data collection instruments, and qualitative research. In addition, after the data collection, the research team also underwent training on analysis of qualitative data.

2.4 Pilot study

After the first training workshop, pilot studies were conducted in Zhen'an County, Fanchang County and Rongchang County. The aims of the pilot studies were to test the research instruments to ensure that they are effective in obtaining the information, enable the research teams to have experience in using the research instruments and allow the research teams to gain confidence in the data collection methods. Interviews and FGDs were conducted, recorded and transcribed. The research team and trainers reviewed the transcripts and the methods, and the topic guides were modified.

2.5 Data collection

2.5.1 Development of data collection instruments

The data collection instruments were developed in collaboration between Fudan University, Karolinska Institutet and LSTM. The tools were then circulated amongst all partners for their comments.

2.5.2 Qualitative methods

The qualitative methods used were Focus Group Discussion (FGDs) and in-depth interviews. Table 1 shows the numbers of FGDs and in depth interviews carried out in each county.

TABLE 1: Numbers of FGDs and in depth interviews conducted in each county

	Shaan'xi		Anhui		Chongqing		Total
	Zhen'an	Lantian	Fanchang	Xuancheng	Rongchang	Tongliang	
FGD	4	6	8	5	6	6	35
In depth interview	13	9	5	4	12	11	54
Total	17	15	13	9	18	17	89

TABLE 2: Methods and participants

Method	Type of participant	Number of groups / interviews					
		Shaan'xi		Anhui		Chongqing	
		Zhen'an	Lantian	Fanchang	Xuancheng	Rongchang	Tongliang
FGD	Heads of township hospitals	2	2	2	1	2	2
	Township doctors/MCH workers/nurses	0	2	2	1	2	2
	Village doctors / FP workers	2	2	2	1	2	2
IDI	Women	0	0	2	2	0	0
	Head of county government	1	1	1	1	1	1
	Head of health bureau	0	1	0	0	1	1
	Head of MCH in health bureau	0	0	1	1	0	0
	Head of NCMS	1	0	1	0	1	1
	Head of Family Planning Commission	1	1	1	1	1	1
	Head of Women's Federation(WF)	1	1	1	1	1	1
	Head of MCH hospital	1	0	0	0	1	1
	Township doctors / MCH workers	4	0	0	0	0	0
	Women	4	5	0	0	6	5

Study participants

Study participants were chosen as they were thought to be able to provide in-depth and relevant information on the study topics. Participants were selected with the help of the local health bureaus and MCH hospitals. Table 2 shows the methods of data collection and the participants selected.

Procedures

The in depth interviews and FGDs were conducted in the offices of the key informants, MCH hospitals, county health bureau offices or hotel meeting rooms. The researchers used topic guides to help conduct the interviews and focus group discussions. Informed consent was obtained from each participant prior to the interview or focus group discussion. With the permission of each participant, all qualitative interviews and discussions were taped and transcribed by members of the research team. Written notes of the interviews and discussions were also taken. To ensure confidentiality of the data, participants' names were not used.

Analysis

Analysis started during the data collection as the research team read the notes and transcripts of the interviews and FGDs. After the data collection, the framework analysis approach was used. A coding index was developed using the research questions and issues arising during the research process. The transcripts were coded using this index. Charts were then developed for each theme. The charts were used to describe the similar and divergent beliefs and practices, develop explanations and find associations between them. Maxqda computer software package was used to manage the data. Analysis was carried out in Chinese. A few sample interviews and focus group discussions were translated into English.

2.5.3 Quantitative data collection

In each county existing quantitative data was collected. This included data on: human resources, funding, expenditure, NCMS. Table 3 shows the sources and collectors of the quantitative data. Tables developed in the training workshop, were used to help the collection of data.

TABLE 3: Sources and collectors of quantitative data in each county

Province	County	Sources of data	Collectors of data
Shaan'xi	Zhen'an	Statistics bureau MCH county hospitals	MCH hospital staff 1 member of research team
	Lantian	Statistics bureau MCH county hospitals	MCH hospital staff 1 member of research team
Anhui	Fanchang	Health bureau	Health bureau staff Research team
	Xuancheng	MCH hospital	MCH hospital staff Research team
Chongqing	Rongchang	Statistic bureau Health bureau CMS office MCH hospital	MCH hospital staff
	Tongliang	Statistic bureau Health bureau CMS office MCH hospital	Research team

Analysis

The quantitative data was analysed to identify trends in the composition and levels of MCH financing and to identify pre-intervention differences between the study counties and townships. Trends in revenue and expenditure for MCH services, composition of services provided and the human resources used for the provision of MCH services were identified.

2.6 Ethical considerations

Ethical approval for the study was obtained from Liverpool School of Tropical Medicine. Local approval was obtained from Xi'an Jiaotong University in Shaan'xi, and local county health bureaus in Shaan'xi, Chongqing and Anhui. An informed consent sheet was given or read out to each participant. Consent was obtained from each participant prior to the interview or focus group discussion.

2.7 Limitations of study

Some interviews and focus group discussions were conducted in the meeting room of the MCH hospitals or county health bureaus. This may inhibit some participants from speaking freely. Similarly, when the local hospital or county health bureau personnel were present at the interviews and FGDs, the interviewers and interviewees were reluctant to speak freely. Selection of women for the FGDs and interviews was carried out by the health bureau and MCH hospital staff. In some counties, women who were close to the interview sites were selected. This may mean that we may not have the full range of women's perceptions on maternal health services.

3 FINDINGS

3.1 Provision of maternal health care

3.1.1 Maternal health services

Interviews with key stakeholders in the six counties revealed the following information about the current maternal health services.

In Shaan'xi, the MCH hospital, the county hospital and the township hospitals provide health care during the antenatal, intrapartum and postnatal periods. Most township hospitals conduct normal deliveries. Postnatal home visits are carried out by the township and village MCH staff. Township hospital staff also supervise and provide education for the village workers. The role of the village doctor is to encourage women to deliver in hospital, to inform the township hospitals of any pregnant women in the village, and to provide health education to pregnant women. The family planning department identifies women who are pregnant, ensures that women of reproductive age have an intrauterine ring, carries out health checks for women (mainly women using contraception), and provides some health education. In Lantian, the head of the health bureau identified that the family planning department also provides some maternal health care services. The leaders of the health bureau thought that improvements in the health systems have helped to increase the hospital delivery rate and reduce infant and maternal mortality.

In Chongqing, doctors in the county and township hospitals provide antenatal care. Most hospitals also carry out antenatal education classes. Village doctors' main role in antenatal care is health promotion. Hospital delivery services are provided by the hospitals at the county and township levels. Most smaller township hospitals are permitted to carry out normal deliveries. Only the larger township hospitals and the county hospitals can perform caesarean sections. County and township hospital doctors and village doctors provide postnatal care. Generally, postnatal home visits are conducted by the staff in the hospital where the woman delivered. If she lives far from the facilities, then either the village doctor visits or the hospital telephones the woman.

In Anhui, antenatal care is provided by county, MCH and township hospitals. Some pregnant women with complications are supervised by the village doctors. Village doctors also provide some health information and advice. Normal deliveries can be carried out in the township and county hospitals. In Xuancheng, complicated deliveries and caesarean sections are only allowed in the county hospitals. This is difficult to enforce in some township hospitals. In Fanchang, women should only deliver in hospitals. Postnatal visits are usually carried out by staff in township hospitals. However, because of shortage of funds and human resources, few home visits are made. Although hospital delivery rate is high, the systematic management rate (5 antenatal examinations and 3 postnatal visits) is very low. One director stated:

“the coverage rate of maternal care is between 80 and 90%, but the systematic management rate is very, very low – not more than 10%” (Director of township hospital, Fanchang County).

The family planning department is responsible for the identification of pregnant women and encouraging women to have antenatal care. In some places they carry out postnatal visits, although this is not one of their responsibilities.

3.1.2 Funding of services

The sources of funding for MCH were identified: government allocation, revenue from clinical services, provincial and national projects. In all the counties, it was clear that respondents felt that the government funding of MCH is insufficient. In most places there is not specific funding for MCH, and it is part of the allocation to public health. It is up to the individual institutions to allocate the funds to MCH. Most of the funding goes to providing salaries, and there is little, if any to develop MCH services. Some staff were concerned that provision of MCH depends upon the income generated from clinical services. Respondents identified that the funding of MCH services is closely related to the quality of services. They felt unable to provide good quality maternal health care as they had little or no funds for equipment and facilities.

It is also clear that funding is not allocated to the lower levels of the health structure. In Anhui, village doctors said that there was no funding for MCH. In Fanchang, the government provided 138 Yuan subsidy per women for maternal health care at the county hospitals. However, this was not available at the township or village levels.

In Anhui, importance was placed on antenatal and delivery care, so most funding went to these areas. Little money was allocated to postnatal care and health workers were unable to carry out postnatal visits.

“Services are lacking, especially in postnatal care. This is mainly because of the shortage of staff and poor transport” (Director of township hospital, Fanchang County).

“There is only 3 000 to 4 000 Yuan available for maternal care each year, how can we develop in this field?” (Township doctor, Fanchang County).

“Lack of funds is the bottle neck to the development of MCH” (Director of township hospital, Zhen’an County).

3.1.3 Human resources

The study revealed that in all the counties, there is not enough staff to carry out the maternal health care activities. In some places this has led to greatly increased workload and dissatisfaction.

Leaders, directors and doctors identified that it is difficult to recruit staff to work in MCH as the salary is so low. Another problem of recruitment was identified. In Chongqing, the county government employ hospital staff, and so hospital directors are not able to employ the staff they need. In Shaan’xi, many health workers are employed on the basis of relationships with other staff or management and not on their skills.

It is also difficult to retain health workers at the lower level facilities as they wish to work in the higher level hospitals where they will be able to secure a better salary and have greater opportunities. More educated and skilled workers want to work in higher level hospitals. In Anhui it was also identified that there was an inequitable distribution of staff. In some township hospitals there were many doctors, whereas in others there is a shortage.

Directors and doctors recognised that the education and skill level of many health workers providing maternal health care services are low. Many township doctors graduate from technical secondary schools. MCH workers have only basic education with few opportunities for further training. Family planning workers and women’s federation workers have very limited training and a heavy workload which affect the quality of care they provide.

Many village doctors are male and cannot provide all the maternal health care services. Women would prefer to be treated by female village doctors. In Anhui, they identified an urgent need for female village doctors.

Staff working in MCH also provide other services to generate more income. Some staff give priority to providing medical treatment rather than MCH services. Doctors recognised that this

affected the quality of care they provide. In Chongqing, it was identified that some directors do not want skilled doctors to provide MCH services and prefer them to provide clinical services that can generate revenue for the hospital. MCH workers are often discriminated against as they do not bring in additional income. The clinicians felt they supported the MCH workers. This has resulted in low staff morale.

“The low income, low education level and limited training of MCH staff make it difficult for them to provide a good quality of care. Many MCH staff transfer to the higher hospital. So the lack of staff is serious” (Township doctor, Lantian County).

3.1.4 Equipment

There were many complaints about the equipment in the township hospitals and village clinics. In some places, only essential equipment is available so that routine tests such as blood, urine and ultrasound can be done. In other places, this equipment is old and does not work well.

Some directors and doctors wished to be able to perform more advanced tests and care such as amniocentesis, and detailed scans to identify genetic diseases. They felt they do not have the necessary equipment to do this. They felt that the lack of equipment affected the quality of services they could provide. This in turn affected women’s perceptions of the services.

“Congenital heart diseases, genetic diseases and microelement deficiencies cannot be diagnosed without the proper equipment” (Director of township hospital, Fanchang).

3.1.5 Facilities and environment

There were also many complaints about the facilities and environment of the township hospitals. Many respondents felt that the condition of these hospitals is poor. Several examples were given. In some places the delivery room is not separate from the consulting room. The delivery bed is also used as an ordinary “sick bed”. There is no heating in the delivery room. There are too few beds for maternal health. Many respondents thought that the facilities and environment affect the quality of care being provided and that this also influences women’s use of services.

“The same bed is used for procedures for contraception, abortion and women check-ups. Cross-infection is unavoidable. We know that the delivery-room and the ordinary sick-room should be separate, but we cannot change this in a short time” (Township doctor, Lantian County).

3.1.6 Providers’ perceptions of quality

There was a variety of perceptions of quality of care amongst respondents in the different counties. In both counties in Anhui, the township hospital directors and other leaders thought the relationships between doctors and patients needed to be improved. Very few directors are satisfied with the quality of care and attitudes of the staff. However the doctors themselves thought the attitudes of the doctors and nurses are good. They want to provide good services that satisfy the patients. Village doctors and family planning workers considered that they provide only low quality services. They thought this is because of limited knowledge and skills about maternal health. Some village doctors also thought that township hospital doctors advise pregnant women to have caesarean sections as this reduces their responsibility during labour and increases their income.

“We can finish 80%-90% of the tasks ordered by the hospitals but it is not effective in meeting the needs of women. We try our best to do postnatal visits and health education” (Village doctor, Zhen’an County).

In the smaller township hospitals in Zhen’an County, Shaan’xi, the directors consider the quality of care being provided as very poor. The main reason is the poor facilities and the lack of equipment. They also consider the relationship between doctors and nurses is poor. This may be due to the media portrayal of the hospitals or the lack of funding. In the larger township hospitals, the directors perceive the quality as adequate and that the services meet the basic needs of the women. The obstetricians are also satisfied with the quality of care they provide at the moment. They recognise that it may become more difficult to maintain a good quality as the demands for good services increase. The village doctors in Zhen’an County are not satisfied with the quality of care they provide. They felt that they are not skilled or experienced in maternal health, they receive little or no funding or salary to carry out services, and health education activities are not effective. They wish to improve the services they provide.

In Lantian County, the leaders of the county government and health bureau thought that although the quality of care has improved, there are still some problems. Township hospital directors thought that the quality of care in the township hospitals and in the villages is poor. They recognised the importance of good relationships between the doctors and patients in attracting patients to the hospitals. They felt that the attitudes of doctors have improved. The village doctors are satisfied with the services they provide. Many of them have been working in their villages for many years and have built up trust with the local people. The township doctors also identified that the village doctors provide good care and treat women and their families well.

“The village clinics are very good to the patients. There is never a problem” (Township hospital doctor, Lantian County).

3.1.7 Policies and regulations

In Shaan’xi, respondents described several policies related to maternal health. The Civil Affairs bureau pays the NCMS premium for the very poor. The County MCH hospital issues special policies and guidelines as instructed by the national guidelines. The family planning policy indicates the number of babies to be born in each county every year, provides criteria for authorisation of pregnancies, and prescribes what the family planning centres do. Many health staff in Shaan’xi thought that the family planning policy affects women’s use of maternal health services. Women who have a pregnancy that is not authorised by the family planning department, give birth at home or in private clinics, or do not have any antenatal care. They wish to avoid fines or other punishments. In Lantian County, women who have a second pregnancy which is not authorised should undergo an abortion. In order to avoid this, women either deliver at home or in private clinics.

“In order to avoid an abortion, many women go to other places to give birth to the baby. So they don’t have a hospital delivery, and they can’t get the free antenatal and postnatal examinations” (Leader of family planning commission, Lantian County).

In Anhui, there were very few regulations specific to maternal health. However, a few were identified:

- MCH indicators are included in the assessment of township hospitals and village clinics. The hospitals and clinics must try to meet the required standards.
- Obstetricians must pass formal examinations in order to provide maternal health care services.

- The government should provide 60% of the salary of hospital health workers.
- Family planning workers visit women of reproductive age once a month to identify women who are pregnant. They organise the authorisation of the pregnancy and provide some health information.
- Women who are not registered as local permanent residents cannot participate in NCMS.
- Women with pregnancies that are not authorized by the family planning department are covered by the NCMS and they can be reimbursed a certain proportion of the delivery fees.
- Delivery in private clinics is forbidden.
- Birth certificates or health care cards cannot be issued to babies who have not been born in hospitals. However, this policy is not strictly adhered to in the villages.

In Chongqing, county level leaders believed that the government attaches great importance to maternal health care. However, this does not filter down to lower levels. Most township hospital directors felt that the county government does not support maternal health care. They receive no guidelines on maternal health care apart from a document on NCMS reimbursement. However, many respondents in Chongqing felt that the family planning policy in China makes it difficult for women whose pregnancies have not been authorised to use maternal health care services. Women with “unapproved births” worried that if they went to the hospitals, they would be discovered by the family planning commission and would be penalised. Women either avoid services provided by hospitals or give false names and addresses to the hospitals. This makes it difficult for health providers to visit women at home. Most respondents felt that this has an impact on maternal health and mortality.

“Women with unauthorised pregnancies feel afraid. They worry that the family planning workers will not allow them to give birth to their babies and would be forced to have abortions. Another reason for their fear was that they would have to pay a fine of thousands of Yuan to the family planning commission after delivery in hospital. This will influence their use of maternal health care and result in increased and out of control rates of maternal mortality” (Leader of All China Women’s Federation, Tongliang county).

3.1.8 Supervision

The study revealed that there were no common systems for supervision. In Chongqing they operate reward and punishment systems at township and village levels. In Rongchang, township hospital directors sign an agreement with the county health bureau to meet certain goals and pay a deposit each year. If the goals are not met, then the deposit is kept by the health bureau. Some township hospitals have established their own supervision system based on rewards and punishments. The directors identified some problems: they are unable to give rewards because of limited funds; and they cannot collect the fines as their staff need the salary to support their families. In Rongchang and Tongliang, the village doctors are supervised by the county MCH hospital and health bureau. The village doctors sign an agreement to meet certain targets and pay a deposit. They are supervised every month and at the end of the year are assessed against the set targets. The amount of money returned to them, depends on how well they performed. They are not satisfied with this method as they never receive the full deposit despite working very hard.

In Anhui there were several methods of supervision with different types of supervisors. Respondents thought this made it difficult to implement supervision effectively. Many supervisors focus on the reported statistics and do not know the actual situation. Some village doctors and family planning workers have not received any supervision.

“If there are uniform criteria, we can at least understand what problems exist in our hospitals. At present, it is difficult to know these” (Township doctor, Fanchang).

In Zhen’an County, Shaan’xi, township hospitals are supervised by the county MCH hospital. They regularly check the records for maternal and neonatal deaths, and antenatal examinations. The directors of the township hospitals consider the supervision to be good. Village doctors are also supervised by the MCH hospital. They assess the quality and quantity of care the doctors provide. At the end of the year, village doctors who perform well are given a bonus. Poor performance is punished with a deduction in their salary. Village doctors also receive 10 Yuan if a woman delivers in hospital. If no women deliver in hospital or do not have any antenatal care, the village doctor’s licence is withdrawn. In Lantian, the township doctors said that although there are documents about supervision, they had not received any supervision from the higher levels.

3.1.9 Relationships with other departments

In Fanchang County, most respondents thought that the family planning department works well with maternal health care providers. There is no overlap in provision of services. In Xuancheng, although the county leaders thought that there is good cooperation between the family planning department and maternal health, there are problems at the lower levels. Township doctors thought that family planning workers carry out antenatal and postnatal care but have limited knowledge and skills on maternal health care. This results in poor quality care and a waste of resources.

In Zhen’an County, it was recognised that the health department has a good relationship with the All China Women’s Federation, family planning department and the television and broadcasting centre. However in the township hospitals, most staff perceive some conflict between the MCH and family planning department. Health providers said that the family planning department sells medicines and gives different treatment.

In Lantian, there are many problems in the relationship between family planning and health departments. The family planning department receive more funds, but the staff has weaker skills. They rely on the health department to do some of their work. The following situation highlights the lack of cooperation: a woman must have permission from the family planning department before a contraceptive device can be inserted or removed. The hospital cannot do this without their authorisation.

3.1.10 How providers are paid

The government funding provides some or all of the salary for staff working in maternal health. However health providers are not satisfied with the salary as it is very low. People working in MCH supplement their income by providing services that people must pay for. Many staff do not want to work in maternal health and their morale is low. They find it difficult to visit villages to provide postnatal care as it takes time and money to travel which will reduce their income. Most village doctors gain their salaries from consultations and prescriptions. They are usually not paid for providing maternal health care services. However, they are still required to provide these services. Most village doctors provide the services without being paid.

“Why don’t they provide maternal health care? Low income is the reason. If you could resolve this problem for them, they should have enthusiasm to do the job. Everybody would like to earn enough money to survive” (Administrator of MCH Hospital, Rongchang County).

3.2 Factors affecting utilisation of maternal health care services

3.2.1 Distance and transport

Most respondents identified that inadequate transport and long distances influence women's use of maternal health care. Women who live in mountainous areas find it more difficult to go to township or county hospitals for antenatal care or delivery. In Shaan'xi, township hospital directors recognised that lack of transport makes it difficult for health staff to visit women at home, carry out health education and supervision of village doctors.

“I live far from the hospital. It takes me about half an hour to walk to the road, and then I catch the bus. This is a big problem for me” (Woman who had a home delivery, Rongchang County).

3.2.2 Costs of services and financial situation

In all counties, the majority of key informants said that women's financial situation was an important factor influencing utilization of maternal health care. Women with better economic status are more likely to use health care services than women with lower economic status. Poorer women are more likely to use either township hospitals or private clinics for maternal health care.

“Women with good economic conditions have as many as 10 antenatal examinations, while poorer women don't have any” (Township doctor, Fanchang).

In Anhui, most women thought that the costs of antenatal examinations and delivery are affordable. However, they think that delivery costs should not be increased.

In Zhen'an County Shaan'xi, although antenatal and postnatal care are free, women still have to pay for investigations and medicines. Most women thought that the costs of antenatal, delivery and postnatal care are worthwhile. However for some women in both counties in Shaan'xi, the costs of hospital delivery are too high, and they choose to deliver at home or in a private clinic.

“It cost me about 400~500RMB for normal labour and some medicines. I got 200RMB reimbursement. I do not have much money but I still spent it on delivery in hospital. I think we should spend this money. And the costs were worthwhile” (Woman who delivered in hospital, Zhen'an County).

“For families in the countryside, several hundred RMB is too much. They don't have many ways to get money. So they stay at home for delivery. If something happens and they can't handle it, they will borrow some money from relatives so that they can go to hospital for delivery. People are poor in the remote area” (Pregnant woman, Zhen'an County).

In Chongqing, although women take cost into account when deciding where to deliver their baby, it is not the most important factor. One woman from Tongliang County said:

“I asked my husband. He said that if you delivered at this hospital, the facilities and care are better. It goes without saying that the costs will be high, but it is worth it.”

3.2.3 Women's awareness for maternal health care

Many government leaders, hospital directors and health staff thought that many women and particularly poor women do not have a good understanding of the need for maternal health care. They identified that women in rural areas place little value on their own health and focus more on the well-being of the men and children in their families. They believed that some have little knowledge of pregnancy, do not know how to look after their own health, and have low motivation to comply with their doctors. Some examples were given: few antenatal and postnatal examinations, attending private clinics to save money, postnatal sexual intercourse and postnatal

bathing. Women with a higher level of education have a greater awareness of need for health care and are also more likely to initiate use of maternal health care services.

Some women thought that it is unnecessary to have antenatal examinations if they are healthy. Others felt that there is no need for postnatal care as long as you stay at home and do no heavy work during this period. Some women thought that the decision of place of delivery depends upon not only their financial situation but also their health.

“There is no need for any care after delivery. You stay at home and take care of yourself. You avoid heavy physical work and don’t work too often” (Woman, Zhen’an County).

However, other women recognised the importance of antenatal and postnatal care, and felt it is safer to deliver in hospital. Nevertheless the costs of these services sometimes influence their decision to access this care:

“We want to do antenatal check-ups once a week or once a month, but we are poor, we can’t afford it. It is not because we don’t understand it is important. Going for check-ups once a month will reduce the risks” (Pregnant woman, Lantian County).

3.2.4 Relationships between providers and users

Most respondents in the six counties thought that the relationships between women and providers are good. Many women said that they trust the township hospital doctors and this influences their decision to deliver in the township hospitals. However a few township hospital directors in Chongqing said that some relationships between doctors and patients are tense. They thought that the media mislead people so that they hold hospitals responsible for all problems. This has resulted in a decrease in patient’s trust in the hospital. The village doctors in Lantian County considered that women and their families do not trust the village doctors any more. They now go to the hospitals for examinations.

“If disagreements about maternal health care happened frequently in your hospital, women would not use the services. If the health providers visited the women in the villages, they would refuse their care” (Administrator of township hospital, Tongliang County).

3.2.5 Women’s perceptions of quality

Most women seemed to be satisfied with the quality of care being provided at the township hospitals. They are happy with the skills and attitudes of the staff. However some women in Anhui are dissatisfied with the costs of services, the facilities and equipment. Some women also thought that the quality of care is better in county hospitals than in township hospitals.

“I think, compared with other places, this township hospital is near and their attitude is good and their skills are good too. I don’t believe in other doctors. I never had a chance to know their skills. So we all come here” (Pregnant woman, Lantian County).

3.2.6 Women’s status and decision making

In Anhui, most women discuss place of delivery and use of maternal health care with their families and make decisions themselves. In some cases, the husbands or mothers-in-law decide.

In Shaan’xi, it was clear that most people thought that women’s status in society is quite low and they have little decision making power. Only half the women are able to make decisions themselves about the place of delivery.

“Women’s status is not good in this county. Women are poor; they can’t support themselves and have no way to get money. They are not independent. They have to ask their husbands for money, so their status cannot be improved. They are not well educated and have no skills. The husband thinks that the woman should stay at home and do housework. The mother-in-law and husband decide the place of delivery” (Head of All China Women’s Federation, Zhen’an County).

In Chongqing, it was reported that most women are able to make decisions themselves about maternal health care.

“Generally speaking, a woman can make their own decision using her basic knowledge. For example, if she found she was pregnant she would go to the hospital to have a check-up no matter how poor her family was. She can make this kind of decision” (Administrator of Women’s Federation, Rongchang County).

3.2.7 Tradition

It was reported that most women follow the traditional beliefs surrounding postnatal care. Women stay at home for the first 40 days after delivery, and follow advice from elders or neighbours. The traditional practices include: avoiding touching water, not washing or combing hair, not brushing teeth, and eating special food.

“Avoid contact with wind and cold water, eating cool food, washing hair, doing heavy work. Eat plenty of chicken and other nutritious food” (Pregnant woman, Rongchang County).

Some village doctors reflected that “lying-in” women do not want to be visited by male doctors because of traditional beliefs. This is also reflected in the following women’s view:

“I think the postnatal visit is good for me. I don’t mind if the doctor is female, but I would feel uncomfortable if the doctor was male” (Woman who delivered at home, Rongchang County).

3.3 New Cooperative Medical Scheme

3.3.1 Maternal health services covered by NCMS

In Fanchang county in Anhui there is no NCMS policy on maternal health care services. Hospital delivery is treated like any hospitalisation episode and is therefore covered by NCMS. Normal delivery and caesarean sections have different reimbursement rates. Between 80 and 90% of women participate in NCMS. Although most women want to be part of the NCMS, they do not know about reimbursements.

In Rongchang County in Chongqing, NCMS covers normal delivery and caesarean sections. In Tongliang County, only caesarean sections are included in the NCMS benefit package. In addition only approved pregnancies are covered by the NCMS. It was interesting that only half the women interviewed participated in NCMS.

In Shaan’xi, delivery in hospital is covered. This includes normal delivery, assisted delivery and caesarean sections. In all counties, antenatal and postnatal care are not covered.

3.3.2 Reimbursement issues

In all counties it was recognised that the current reimbursement proportions are too low. Some respondents hoped that all the costs of delivery could be covered by the NCMS.

Some village doctors were confused about what can be reimbursed. In Fanchang, Anhui the NCMS has a fund surplus and the leaders therefore thought it is possible to increase the

reimbursement rates. In Shaan'xi and Anhui, the procedures for reimbursement were acceptable to the women.

3.3.3 Impact of NCMS

There were several ways that the NCMS has influenced maternal health services and maternal health. County government leaders and hospital directors recognised that NCMS had promoted hospital delivery and this has an impact on maternal health and reduced infant and maternal mortality. Women were happy to receive some money from NCMS for delivering in hospital. NCMS can also have an impact on the quality of care provided in the townships hospitals. As the reimbursement rates are highest at the township level hospitals, more people use these services. This means that more revenue is generated in these hospitals and this can be used to improve conditions and quality of care. In Shaan'xi, the following improvements in the quality of care were identified: case histories are now recorded, friendlier and kinder attitudes of the health providers, more monitoring of prescriptions and treatment.

Some respondents suggested that NCMS does not have any impact on the services provided in the villages.

“The NCMS has improved the quality of services in applying more control on medical treatment and building up good relationships between providers and patients. Many methods were used, including monitoring of prescriptions, and monitoring of diagnosis and treatment. NCMS improved the medical treatment in the hospitals and more patients came to the hospitals to seek medical services. Hospitals get more revenue” (Deputy Head of County government, Zhen'an County).

3.3.4 Plans for NCMS and maternal health services

In Fanchang, the county health bureau plan to include antenatal and postnatal care in the NCMS benefit package. The leaders considered that this will help improve the systematic management of childbearing women. The fund surplus can be used to help implement this change. Township doctors suggested that a special fund should be established to provide free MCH services. Village doctors wanted women with unauthorised pregnancies to have the same NCMS benefits as women with authorised pregnancies.

“The reimbursement is too low. If the whole cost could be supported by NCMS, all women would deliver in hospital. 60% of people in our township are poor. Poverty is the main reason for home deliveries” (Village doctor, Zhen'an County).

In Zhen'an, it is suggested to include antenatal care and delivery complications in the NCMS benefit package, as well as increasing the reimbursement proportions.

In Rongchang, there are plans to increase the reimbursement proportion for hospital delivery. There are no plans to introduce antenatal and postnatal care into the NCMS.

In Tongliang, normal delivery will be introduced into the NCMS in 2007. They also want to reimburse people who work outside the county. In 2007 NCMS will start in Xuancheng and Lantian. They plan to include hospital delivery in the benefit package.

3.4 Training

3.4.1 Issues about current training

Directors and health care providers in all counties identified similar problems with the current training. There are very few opportunities for training and in some places there has been no training in MCH for many years. Township hospitals with greater profits and county hospitals are able to provide more training opportunities.

“I have worked in maternal care for 23 years but have never received any in-service training” (Township doctor, Fanchang).

Methods of training are also inadequate. Most training sessions focus on theory and skills and are in the form of lectures. There are no opportunities to practice what they have learned. Some thought that the training is not detailed enough and is too short. Many health providers recognised that the trainers themselves have not undergone training themselves. Many directors were reluctant to send their staff for training for several reasons: they cannot afford the training costs and the salaries; it often leaves few or no staff to provide maternal health care in the hospitals; and many staff after receiving training transfer to other hospitals where they can receive more salary. The village doctors were not satisfied that they have to pay for the training.

3.4.2 Training needs

Directors and health care providers identified similar needs for training. They wanted training on: theory and practice; clinical skills for normal antenatal, childbirth and postnatal periods; identification and management of complications in pregnancy, childbirth and neonatal period; interpersonal skills; health education; and management skills. In addition a few directors requested training on regulations, statistics, data management and proper use of equipment.

Township hospital doctors and directors suggested that training can be provided by experts from the province university or the county MCH department. Training can be done either on a regular basis for example once a month or health providers can be sent to higher level hospitals for longer periods to gain clinical experience and training. They also requested a variety of teaching methods to be employed: multi media, internet, teaching in the wards and clinics; visits to other health facilities; presentations of cases and discussions; learning materials to take home. They all wanted the training to be free.

One village doctor from Tongliang stated:

“I want training on health care and clinical skills. I want to learn by practice – by watching and doing things myself, not just by lectures. I would like to go to a higher-level hospital, at least to a county level hospital, to attend training. Then to have further training - lectures, instructions, discussions with other staff, in the villages or townships.”

3.5 Non-hospitalised delivery

3.5.1 Situation

In Anhui province, most women now deliver in hospital. Hospital delivery has been promoted over the last few years, including the introduction of the policy of giving birth certificate only to babies who have been born in hospitals.

In Zhen'an County in Shaan'xi, township doctors estimated that between 20 and 30% of women deliver at home. In areas of poor transport this can be as high as 40%. In Lantian County,

some doctors said that home delivery is common because of poor transport and lack of money. However others said that home delivery is rare and that some women deliver in private clinics.

In Rongchang County in Chongqing, it was reported that between 10% and 40% of women deliver at home. In Tongliang County, directors of township hospitals thought that very few women deliver at home.

3.5.2 Reasons for non-hospitalised delivery

Interviews and discussions with women and health providers revealed many reasons for having a home delivery. They included: transport problems, hospital delivery is too expensive, poor skills of township doctors, poor equipment in township hospitals, dissatisfaction with previous care, unauthorised pregnancies, traditional beliefs, poor health awareness, second baby is easy to deliver, fast labour and home delivery is more convenient. The director of a township hospital revealed several reasons for woman delivering at home:

“There are three main reasons. Firstly, women who live in a remote area like Gaofengzhen, there is no road for vehicles and it is 15 to 20 km far away from the nearest hospital. It will take five to six hours to get to the hospital because it is a stone road and not flat. The pregnant women can’t walk or be carried by men for that length of time. Secondly, most women who delivered at home were trying to escape the FP policy. And another one is the awareness of the farmers here: if the first child was a girl, they want a boy in the second birth. If the second baby is a girl and they have delivered at home, they can send her to other people to raise. If they deliver in hospital, they cannot do this. So they decide to have the baby at home. This is the influence of the FP policy. Thirdly, the reason is poor finance. Even if they don’t have to pay the hospital delivery costs, they still have to pay for food and transport which can be 100RMB or more” (Director of township hospital, Zhen’an County).

3.5.3 Ways to reduce non-hospitalised delivery

The health providers and directors identified ways to try and reduce the number of home deliveries. These included: more effective health education for women and families; improve quality of care in hospitals including interpersonal skills and attitudes of health staff; reduce the costs of hospital delivery; develop policies that will support families with low incomes; provide free transport; and village doctors can accompany women when they deliver in hospital.

“We should do more health education with women and follow them up regularly so that good relationships are made. We also should enhance our skills, equipment and be kind to them. We should enhance the system administration of pregnant women and reduce the costs” (Director of township hospital, Lantian County).

3.6 Suggestions to improve maternal health care

Health care providers, managers and policy makers identified several ways to improve maternal health care. The overall suggestion was for the government to place more emphasis on MCH and in particular increase the funding for MCH. More specifically, the following suggestions were made:

- Ensure a good salary for MCH workers and township directors.

- Village doctors should be given a subsidy to provide maternal care services as this would motivate them to do this work.
- More funding for health education: MCH workers can receive a subsidy and they can use better materials and methods.
- Improve skills of township hospital staff through training. The training should be free.
- Improve the hospital buildings and in particular the delivery rooms.
- Provide better equipment for the township hospitals such as fetal heart monitor, incubator.
- Provide subsidies for women who deliver in hospital.
- Provide women with free transport or give them subsidies for transport.
- Postnatal care should have a separate fund for and should be included in the family planning system.

4 DISCUSSION

The previous section has presented an overview of maternal health care within the health system in six study counties and the main factors influencing the provision and utilisation of maternal health care. This section starts by discussing significant issues about the health systems which influence maternal health care. Key points for the design of the CHIMACA intervention are then detailed.

Maternal health care services operate within the overall health system. The health system has a direct impact on what, where, how and by whom maternal health services are provided (Graham 2002). A properly running health system is necessary for the implementation of strategies to reduce maternal mortality and morbidity. Apart from the essentials of providing basic equipment, supplies and referral systems, financing and human resource organisations are equally important components of the health system.

Inadequate funding

It is clear from the qualitative investigations that in most places the government funding for maternal and child health care is inadequate. Funding for maternal health is part of the allocation for public health and it is up to the individual facilities to allocate the funds to maternal health. As such, maternal health competes against other public health areas for resources. On the other hand, maternal health is now on the international agenda for health and development. One of the millennium development goals is to improve maternal health, with the target of reducing the maternal mortality ratio by $\frac{3}{4}$ between 1990 and 2015 (United Nations 2000). In China, a review published recently highlighted that government funding of maternal and child health is insufficient to ensure access to a quality essential package of interventions. They also found that most financial resources are used in hospital based curative care at county level and not at the township level nor public health interventions (Ministry of Health China et al. 2006). Without adequate funding for maternal health care, it will be difficult to realise the goals set by the international community and national government.

Human resources

The qualitative investigations revealed that there are many issues surrounding human resources in maternal health. There is a shortage of health personnel working in maternal health to ensure provision of all the services that are required. Health facilities in the townships, and particularly the poor areas, find it difficult to recruit and retain skilled staff because of their inability to provide a good or competitive salary. Health workers are concentrated in the county level facilities or the more affluent and larger township hospitals. This is the case in many regions of China and for other areas of health care. It is more difficult to attract qualified professionals to rural areas than urban areas (Gong et al. 1997). Richer counties generate more revenue from local taxation from which they can fund more attractive remuneration packages to get the best staff (Liu et al. 2006). In a study of the factors influencing the implementation of the maternal and infant health care law in poor rural areas in China, it was found that the low level of skills and qualifications of staff limit the quality of services provided (Tolhurst et al 2004).

In service training for health workers in maternal health raises some important issues. Firstly, it appears that there is very little training available or carried out in this area. Some health workers have received no in-service training for many years. Secondly, managers are reluctant to send their staff for training because of the costs involved in sending staff for training, and fear of losing trained staff to better paid jobs. This was also the case in a study in Fujian province (Liu et al. 2006). They also found that township hospital managers prioritised training for doctors and in areas where it was anticipated that more revenue for the hospital could be generated. Some managers were therefore reluctant to send their staff to training courses on MCH. Thirdly, in some areas, village doctors are required to provide antenatal and postnatal care services. This is frequently without proper training and remuneration. This may hinder the effectiveness of maternal health care in the rural areas. In service training, together with adequate support and supervision is an important aspect to improving the quality of care being provided (Koblinsky et al. 2006).

The situation of supervision for health staff working in maternal health raises some important points. Methods for supervision varied from county to county, and there was no clear uniform way of providing supervision. In some areas, respondents' had not received any supervision visits. Weak supervision can be related to the lack of resources, both human and financial. It is not clear in this study, how effective the different ways of supervision were in terms of providing support and improving staff performance. A very interesting finding emerged from the data of the qualitative investigations. In Chongqing village doctors are required to pay a deposit to the health bureau, and if the targets for that year are met, then the deposit is returned to them. It is not clear how this type of supervision and monitoring affects the provision of care and in particular the quality of care being provided. Further investigation of this supervisory method, the extent to which it is implemented and its impact on quality may be useful. Supportive supervision does affect health worker performance and may be appreciated by staff as a sign of organisational support and increase their motivation (Dieleman et al 2006).

Facilities

It is evident from the qualitative studies that both health care providers and users were not satisfied with the facilities and equipment in the township hospitals. With limited funding, it is difficult to upgrade or maintain facilities. Skilled providers require infrastructure support to practise their skills (Koblinsky et al. 2006). Poor facilities may also influence users' perceptions of the quality of care and their use of the services.

Some health managers and providers wished to be able to provide more advanced tests such as amniocentesis but were unable to perform these tests as they did not have the necessary equipment. It is not clear what the motivation behind this perceived need is. It may be as a result of demand from women and families, identified clinical need, or may be due to financial incentives. However, this kind of perception is of concern bearing in mind the limited numbers of skilled health personnel and the lack of basic equipment to provide essential maternal health care.

Provider payment mechanisms

The way health workers in the township hospitals are paid appears to have an impact on the kind of services that are being provided. It is clear from the qualitative investigations that health workers need to generate additional income through clinical work in order to supplement their salary from the government. It is difficult to generate additional income from some maternal health care services such as postnatal care and antenatal care. Priority is therefore given to providing services that can generate more revenue. The quality of maternal health services may be jeopardised by the over prescription of interventions such as blood tests and ultrasound scans, and medications. Supplier-induced demand drives the health system in China towards fewer preventative and more

curative services and increasingly more sophisticated care. The bonus systems commonly used in Chinese hospitals also encourage overuse of expensive drugs (Dong et al 1999).

Most village doctors do not receive salaries from the government, and therefore rely on consultations and prescriptions for their incomes. It is not clear from this study how this affects their provision of antenatal and postnatal care. Further investigations into their role in maternal care may be useful. In other studies village doctor prescribing behaviour for common diseases could be influenced by many factors including: payment methods for providers, drug company promotion, patient ability to pay and patient demand (Dong et al. 1999, Bloom et al 2001).

Rapid increase in caesarean section rates

In all the study counties it is evident that the number of Caesarean sections is rising. More dramatic increases are seen in Fanchang, Tongliang and Rongchang counties. In Fanchang caesarean section deliveries have outnumbered normal deliveries since 2003. Population-based caesarean rates of no less than 5% and no more than 15% have been suggested as the optimum (UNICEF et al. 1997). Although, Caesarean sections are life saving for some women and their babies, there are risks attached to having this major surgical operation.

Increase in caesarean section rates are evident in urban China where it increased from 18.2% in the early 1990s to 39.5% in the early 2000s (Tang et al 2006). Dramatic increases have been seen in other countries around the world such as USA (Porreco and Thorp 1996), Brazil (Hopkins 2000) and Egypt (Khawaja et al 2004). Many factors have influenced the increase in Caesarean sections, most of which go beyond the clinical practice of obstetrics. Studies conducted in many countries indicate that changes in health financing and reimbursement practices, and increasing consumer awareness and expectations have had a significant impact on current practice (Lei et al 2003, Mishra and Ramahathan 2002). In urban China, non –medical factors may have an impact on the increasing rate of caesarean sections. Women with social health insurance were more likely to have Caesarean section delivery (Tang et al 2006). The fee-for-service payment method used in China provides hospitals with a financial incentive to provide costly medical care, and has escalated medical care costs greatly. Caesarean section delivery was found to be apparently much more expensive than normal delivery procedures because it requires a surgical operation and a longer hospital stay (Li 2005).

So what is happening in rural China to increase the caesarean section rate? It could be linked to the re-introduction of the NCMS and the fee for service payments that are in operation; limited funding of MCH resulting in providers having to provide high cost interventions such as Caesarean sections; increased demand for Caesarean section by women and their families as caesarean section become the “norm” for childbirth; one child policy. It was suggested in interviews with the village doctors that township hospitals doctors advise women to have caesarean sections as this reduces their responsibility during labour and increases their income. Exploration of the underlying reasons for this situation is clearly needed.

5 ISSUES FOR THE INTERVENTION

The intervention is composed of two main components: training of health workers and changes to NCMS benefit package. In some counties, the intervention will also include some health education for women and their families. The following points have arisen from the health systems study which may be important when designing these interventions.

Training:

- Areas to include in the training: many areas were identified by the participants of the study. They included antenatal care, delivery care, postnatal care, identification and management of complications during antenatal, delivery and postnatal periods, management, health education, communication. It may be difficult to cover all of them in the way that will enable effective learning and encourage changes in practice. Focused training may be more useful. This leads on to the methods of training.
- Methods of delivering the training: some wanted short duration training whilst others preferred to work at a higher level facility for longer periods to gain experience and learning there. A general response was that the training should be interactive, with a focus on experiential learning, discussion and practical sessions, rather than lectures and other didactic methods. They wanted the training to be useful for the actual work they do. This requires that the trainers are clear about what services the health workers are providing and how they are providing them.
- Who to include in the training and selection of the students: some health workers had not received any training for many years. It would be very important that these kinds of health workers are included in the training. It is equally important that the health workers who are working in maternal health are the ones receiving the training.
- Other factors may be important in improving quality of care. Training is just one approach to improving quality of care. Enabling environment, supportive management, supervision and monitoring are all important.

NCMS:

- In Zhen'an County, there was a deficit in the NCMS fund in 2005. This may make it difficult for additional maternal health services to be included in the NCMS benefit package and for this to be sustained over time.
- Women pay for blood tests, ultrasound scans, other investigations and medications during pregnancy, childbirth and postnatal period. For some women this may be quite substantial amounts. If antenatal and postnatal care are included in the NCMS benefit package, there may be financial incentives for health providers to prescribe investigations and drugs that may not be clinically indicated. Ways to monitor and assure rational use of investigations and medications by health providers need to be identified and implemented.
- There are hidden costs to antenatal care and hospital delivery. This includes transport costs and food for the mother and carer, as well as possible loss of earnings or productivity for the mother and her family.

6 RECOMMENDATIONS FOR EVALUATION OF THE PROJECT

As part of the evaluation of the project, a health systems study will be conducted in year 4. There are several lessons to be learned from this health study that will be useful when carrying out the evaluation.

- The interviews and focus group discussions covered a very wide range of topics and it was therefore difficult to obtain in depth information. When the topic guides are developed for the evaluation, we should focus our questions and exploration on the most important topics.
- Qualitative research heavily depends on the skills of the researchers for example active listening and probing skills. These are skills that take time and experience to develop. As most of the researchers were new to the qualitative methods of enquiry, these skills are still developing. It would be good for the researchers to have further training on qualitative methods and continue to practice carrying out qualitative interviews and focus group discussions.
- Obtaining good quality data from qualitative investigations takes time. It is important not to rush the process of doing the interviews and focus group discussions, to allow time to discuss the questions used and the responses obtained as well as how the interviews and discussions were conducted. Sufficient time is also needed to transcribe the interviews and discussions, and to analyse the data.
- In order to explore a wide range of perceptions on maternal health services i.e. from areas near and far from health facilities, from basic township hospitals and more advanced township hospitals, from lower and higher socio economic areas, careful selection of participants is required. Researchers need to discuss the selection process in detail with the local officials.
- Respondents need to feel comfortable and secure to be able to divulge information about their perceptions and experiences of maternal health services. Therefore it is important to think carefully about the location of the interviews and discussions and who is present at these times.

7 SUGGESTIONS FOR INDICATORS FOR PROCESS EVALUATION

Process indicators:

- Rate of antenatal examinations in the 12 weeks
- Average number of antenatal examinations per woman
- Rate of pregnancies with complications being followed up by health providers
- Rate of hospital delivery
- Rate of antenatal visit
- Rate of postnatal visit
- Rate of systemic management (5 antenatal examinations and 3 postnatal examinations)

Indicators to monitor implementation of interventions:

Actions taken to include maternal health services in NCMS benefit package:

- What they are
- When they were done
- Who did them

Actions taken to improve the quality of maternal health care services included in the NCMS benefit package:

- What they are
- When they were done
- Who did them

Training:

- Number of training programmes
- Number of total health workers trained
- Number of different types of health workers trained
- Length of training
- Content of training
- Who delivered training
- Cost of training

Overall project indicators:

- Number of reports and publications with evidence for development of policy for improving the effectiveness and quality of maternal health services.

Capacity building:

- Number of students or staff of partner institutions registered for PhD / Masters programmes
- Number of training opportunities for students or staff of partner institutions
- Number of students and staff of partner institutions received training
- Length of training
- Content of training

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