



Comprehensive Evaluation of the Community Health Program in Rwanda

Qualitative Evaluation Report *Draft*

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TABLE OF CONTENTS

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 3 |
| 2 | EVALUATION PURPOSE, OBJECTIVE AND SCOPE | 4 |
| 3 | QUALITATIVE EVALUATION METHODOLOGY | 4 |
| 3.1 | KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS | 4 |
| 3.2 | DATA COLLECTION | 7 |
| 3.3 | DATA MANAGEMENT AND DATA ANALYSIS | 8 |
| 3.4 | ETHICAL CONSIDERATIONS | 8 |
| 3.5 | LIMITATIONS..... | 9 |
| 4 | FINDINGS..... | 10 |
| 4.1 | IMPACT..... | 10 |
| 4.2 | RELEVANCE | 13 |
| 4.3 | EFFECTIVENESS | 17 |
| 4.4 | EFFICIENCY..... | 21 |
| 4.5 | SUSTAINABILITY..... | 24 |
| 5 | CONCLUSION | 27 |
| 6 | ANNEXES | 27 |

List of Tables

| | |
|---|---|
| Table 1: Type of stakeholders participated in KIIs and FGDs | 4 |
| Table 2: Characteristics of community participants in FGDs..... | 6 |
| Table 3: Characteristics of CHWs participated in the FGDs..... | 7 |

List of Figures

| | |
|--|----|
| Figure 1: Visual map of themes-relating to impact of the CHP | 10 |
| Figure 2: Visual map of themes relating to relevance of the CHP..... | 13 |
| Figure 3: Visual map of themes relating to effectiveness of the CHP | 17 |
| Figure 4: Visual map of themes relating to efficiency of the CHP | 21 |
| Figure 5: Visual map of themes relating to sustainability of the CHP | 24 |

1 INTRODUCTION

Located in Eastern Africa, Rwanda has an estimated population of 11.5 million people, of which approximately 14% are children under the age of five years. According to the African Development Bank, Rwanda is one of the countries with highest average growth rates in Eastern Africa. Along with those socio economic development, Rwanda has achieved remarkable progress in improving maternal and child health outcomes. According to the Rwanda DHS (2015), the under-five mortality rate has declined from 152 per 1,000 live births in 2005 to 50 per 1,000 live births in 2014; the neonatal mortality rate has also reduced from 37 per 1,000 live births to 20 per 1,000 live births. The maternal mortality ratio (MMR) has also successfully reduced. In 2005, the estimated MMR was 750 per 100,000 live births and 210 per 1,000 live births in 2014. Thus, Rwanda has met MDG 4 and 5 targets.

Progress in improving child nutrition has also been observed, although at a more modest pace: child stunting prevalence was estimated at 51% in 2005, and it was still as high as 38% in 2015.

Established in 1995, the Community Health Program (CHP) aimed to enhance access to essential services for the population in Rwanda. From 2005, after the decentralization policy, sustained capacity building of the Community Health Workers (CHWs) was introduced through training, mainly in maternal and child health (MCH) service delivery; this was complemented with supplying relevant health materials for CHWs.

After 20 years of CHP implementation, the Ministry of Health (MoH) in partnership with UNICEF has commissioned an independent evaluation of the program. It has been envisaged that the evaluation would guide the MoH on how to use CHWs most effectively to achieve national health goals, contributing to the achievement of post-2015 global sustainable development goals (SDGs).

In January 2016, the Centre for Maternal and Newborn Health (CMNH), at the Liverpool School of Tropical Medicine (LSTM), was contracted to perform an independent evaluation of the CHP in Rwanda. The evaluation started in January 2016, and it will be completed by the end of November 2016. The evaluation composed of a mixed methods approach which was fully endorsed by the Evaluation Steering Committee during a meeting held in Kigali on the 6th of April 2016.

This report presents key findings of evaluation employing qualitative methods conducted as part of the comprehensive evaluation of the CHP in 2016. It begins with the aim and objectives of the evaluation followed by description of the methods employed in the qualitative evaluation: sampling, data collection, data management and analysis. Following from this, the report describes ethical considerations; limitations of the evaluation and strategies to minimise the impact of these limitations.

Finally, the report presents key findings of the qualitative component of the evaluation.

2 EVALUATION PURPOSE, OBJECTIVE AND SCOPE

Aim

The aim of the evaluation of the Community Health Program (CHP) in Rwanda is to gain an in-depth understanding of the CHP progresses and challenges, and to identify areas of improvement as well as success factors.

Objectives

The objective of the evaluation is to understand whether the CHW program has achieved its four intended objectives as stated in the Community Health Strategic Plan (2013-2018):

1. Strengthen the capacity of decentralized structures to allow community health service delivery.
2. Strengthen the participation of community members in the community health activities.
3. Strengthen CHWs motivation through CPBF to improve health service delivery
4. Strengthen coordination of community health services at the central, districts, health centres and community levels.

3 QUALITATIVE EVALUATION METHODOLOGY

3.1 KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS

Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were conducted in August and September 2016 to collect the views and perspectives of stakeholders at various levels of the community health system. (**Table 1**)

Table 1: Type of stakeholders participated in KIIs and FGDs

| Type of participant | Level | Participants | Data collection methods |
|--|-----------------|--|-------------------------|
| MOH/RBC, other ministries, NGOs, multilateral and bilateral organizations | Central | 22 | Key informant interview |
| Mayor/vice-mayor, district administrative officer, In-charge of district pharmacy, NGO or CSOs | District | 12 | Key informant interview |
| Director of district hospital, CHW supervisors, Titulaires, health care providers | Health facility | 8 | Key informant interview |
| Executive secretary, in-charge of health posts, CHWs cell coordinator | Cell | 8 | Key informant interview |
| CHW, Community members (men and women separately) | Community | 12 FGDs (4 for men, 4 for women, 4 for CHWs) 129 participants | Focus group discussion |
| Total participants | | 179 | |

KIIs were undertaken with different levels of the system: national policy makers and stakeholders, directors and managers of health services at local/district level, health workers, and supervisors from

the community level. KIIs were conducted by LSTM team members, following semi-structured topic guides (**Annex 1**); translators were used to support the interview process where needed. Interviews were performed at the various levels of the health system, using purposive sampling, to gather views of various stakeholders involved with the community health program in Rwanda.

FGDs were conducted with two groups: CHWs and community groups, following semi-structured topic guide (Annex 2). FGDs with CHWs were conducted in 4 districts, including 10-12 male and female CHWs, with a maximum 1 FGDs per district. In total, 4 FGDs were conducted with 44 CHWs involved in discussing key areas of the CHWs program.

At community level, maximum variation sampling¹ was used to identify and recruit male and female community members. The focus groups were composed of 7-12 participants and were conducted by experienced and trained facilitators from the Rwandan based firm “Laterite”. In total, 8 FGDs were held with 40 community women and 45 community men. Maximum variation sampling was used in FGDs by selecting participants from a wide variety of different community members with the aim of identifying central themes that cut across the variety of cases. Hence, the districts were chosen due to difference in socio-economic and health characteristics. **Table 1** illustrates characteristics of respondents participated in FGDs and KIIs.

In total 50 KIIs were conducted at national, district, facility and community levels. Twenty two respondents from national level involved key staff members of the Ministry of Health (MOH), Rwanda Biomedical Centre (RBC), Ministry of Finance, and multilateral and bilateral organizations who are familiar with the CHP. At district level, total 12 interviews were conducted with vice mayors in-charge of social affairs and pharmacy directors of the district hospitals. At health facility level, 8 interviews were conducted with hospital directors, pharmacy directors, CHW supervisors from the facility. At community level, 8 interviews were conducted with cell coordinators in-charge of the CHWs.

A total of 12 FGDs (three in Kicukiro district; three in Gicumbi; three in Ngororeo district and three in Kayonza district) comprising of 85 community men and women; and 44 VHWs. Participants for community groups were selected based on the following criteria:

Male community members

Distance

- 3 men living far from the HC
- 3 men living midway to the HC
- 3 men living close to the HC

Parenting-within each distance category at least:

- 1 father aged 15-24 years
- 1 father of a child under 5 with other care-givers
- 1 father of a child under 5 without other care-givers

Female community members

Pregnancy

Distance

- A pregnant woman who lives far from the HF

¹Creswell, J.W. (2013). Qualitative inquiry and research design, 3rd edition, London: Sage (Page 151-157) in the chapter “Data collection”.

- A pregnant woman who lives midway
- A pregnant woman who lives close to the HF

At least one of these other categories:

- 1 pregnant woman aged 15 to 19
- 1 woman pregnant for the first time
- 1 woman who has had other children

Nursing

Distance

- A nursing woman who lives far
- A nursing woman who lives midway
- A nursing woman who lives close

At least one of these other categories:

- 1 nursing woman aged 15 to 19
- 1 woman nursing for the first time
- 1 woman who has had other children

Young children

Distance

- A woman with children U5 who live far
- A woman with children U5 who live midway
- A woman with children U5 who live close

At least one of these other categories:

- 1 woman with children U5 aged 15 to 19
- 1 woman with caring for children U5 for the first time
- 1 woman who has experience caring for children U5

FGDs were held separately for men and women to create an environment where participants could express themselves comfortably in the absence of the other gender counterparts. Overall, the community level respondents were composed of women and men in reproductive age and/or caregivers of children under 5, reflecting the selection criteria required for the evaluation. 100% of community groups were of reproductive age of which 53% were women. (**Table 2**).

Table 2: Characteristics of community participants in FGDs

| Age group | Total participants | Assistance received from a CHW (Min-Max) | Time taken to reach a nearest health centre using the usual transport means (Min-Max) |
|---------------------------|--------------------|--|---|
| 16-24 years | | | |
| Male | 9 | 0 to 4 times | 5 minutes to 1 hour 30 minutes |
| Female | 24 | 0 to 3 times | 5 minutes to 2 hours |
| 25-49 years | | | |
| Male | 31 | 0 to 4 times | 5 minutes to 1 hour 40 minutes |
| Female | 21 | 0 to 10 times | 5 minutes to 1 hour 30 minutes |
| Total participants | 85 | | |

For focus group discussions with CHWs, 61% were women within the age range of 29 to 64 years and worked as a CHW from 1 to 18 years. **Table 3** presents characteristics of CHW participated in the FGDs.

Table 3: Characteristics of CHWs participated in the FGDs

| No. of CHWs participated | Gender | Age range (in years) | No. of years working (Min-Max) | Time to a nearest health centre by walking |
|--------------------------|--------|----------------------|--------------------------------|--|
| 17 | Male | 33 to 70 | 1 to 22 | 12 minutes to 2.5 hours |
| 27 | Female | 29 to 64 | 1 to 18 | 10 minutes to 3.5 hours |

Despite the fact that we had relatively few FGDs as we have employed maximum variation sampling, we reached data saturation after 3 FGDs with men, 4 FGDs with women and 4 FGDs with the CHWs.

3.2 DATA COLLECTION

The Rwanda National Ethics Committee (RNEC), the National Institute of Statistics of Rwanda (NISR) and the Ministry of Health (MINISANTE)/Rwanda Biomedical Centre (RBC) granted approvals to access potential respondents for KIIs and FGDs. Permission to access the local authorities at district, sector, cell and village levels were also obtained from relevant authorities.

Topic guides were developed for each FGD and KII category (**Annexes**) and these were pilot-tested with non-participating respondents and further refined before use.

KIIs were conducted by the LSTM evaluation team while FGDs were conducted by Laterite, the consulting company based in Rwanda and subcontracted for the purpose of data collection.

Data collection took place from 8th August to 30 September 2016.

Before the start of each interview or FGD, participants were asked to read an informed consent form, to express their willingness (or not) to participate and to record that on the consent form. If a participant was unable to read, the facilitator undertaking the interview or FGD would read the form aloud to him or her.

For KIIs, two copies of the consent form were handed out to the participants at the beginning of the interview and signatures were obtained. One signed copy was given to the participants and the other was kept by the evaluation team in a secure study file.

For FGD, two consent forms in Kinyarwanda and approved by RNEC, were presented for each respondent. The facilitators kept one signed copy of the form and the respondent kept one copy of the form for future reference. The consent form has contact information so that the respondent can follow up on the FGD if desired.

The informed consent included recording of the discussion on voice recorder before the start of each discussion. The facilitators read the notes back to the participants at the end of the interviews or discussions so that clarifications could be made and to minimize the facilitator’s bias or errors. When necessary, the facilitators asked the respondents to provide specific examples to make the right interpretation of a situation.

All interviews were conducted in English and voice-recorded with the consent of each participant. They were transcribed in English. All transcribed data were anonymised and given labels. All FGDs

were conducted in Kinyarwanda and voice-recorded after the consent was obtained. They were translated and transcribed verbatim from Kinyarwanda into English. All transcribed data were anonymised and given labels within the FGDs.

3.3 DATA MANAGEMENT AND DATA ANALYSIS

All data was managed in accordance with LSTM internal data management policy and protocols.

We analysed all transcribed FGD and KII material thematically. Recordings were transcribed into Word documents and Excel was used to manage data according to the codes and categories identified. We have used an inductive approach in data analysis. Data was initially coded using open codes and compared against the evaluation framework.² After construction of a preliminary coding scheme, each code was examined in detail and further refined into categories.

3.4 ETHICAL CONSIDERATIONS

LSTM Research Ethics Committee approved the research protocol for this evaluation. The Rwanda National Ethics Committee (RNEC), National Institute of Statistics of Rwanda (NISR) and the Ministry of Health (MINISANTE)/Rwanda Biomedical Centre (RBC) granted approval to conduct the field work (KIIs and FGDs).

The primary ethical concern in this evaluation was protecting the confidentiality of data collected in the KII and FGDs. For example, despite requests for FGD participants to keep all information discussed confidential, we cannot guarantee that information was not discussed outside the FGDs. In addition, participants may have felt that their views and responses could affect the quality of health care they receive at health facilities or the type of health services available for their communities.

In order to minimise these potential breaches of confidentiality, KII and FGD data was anonymised during data collection and analysis and when preparing reports so that responses cannot be traced to individual respondents. Pseudonyms/labels were used in place of individual names and home villages. Participation without coercion or fear was ensured throughout the process. Discussion of any sensitive but useful information obtained from the discussions was explored further privately with the participant after the FGD. Hard copies of all data was kept in locked cupboards and soft copies on password-protected computers so that people that are not part of the project team would not have unauthorised access to the data.

Recordings of KIIs and FGDs were stored on password protected data devices and will be destroyed five years after the end the assignment. Every effort has been made to ensure that the confidentiality and privacy of respondents were protected at all stages of data collection and processing.

The research team strictly adhered to the LSTM's Code of Practice for Research Conduct in designing and implementing the evaluation.³

²Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*: Sage, p. 201.

³https://lstmed.sharepoint.com/research/Research-Governance/Documents/Codes%20of%20Practice/CoPforConductofResearchVersion3.0_000.pdf

3.5 LIMITATIONS

This qualitative component of the evaluation has a number of limitations, outlined below. These have been taken into account by the evaluation team through mitigation strategies aimed to minimise their impact.

- 1) It is possible that respondents gave standard responses that might not reflect their own opinions. To overcome this, the evaluation team triangulated the information collected from other key stakeholders, with the aim of identifying opposing or contradicting information as the evaluation can identify how different findings corroborate with different opinions.
- 2) CHW participants might have been reluctant to openly express their opinions during FGDs even though facilitators were external to the programme. Therefore, the facilitators appointed by the Laterite for the FGDs open-ended questions (where applicable). This helped minimize interviewer/facilitator bias.
- 3) The facilitators tried their best to be as facilitative as possible in order to avoid the influence of interviewer/facilitator's presence during KIIs and FGDs and to make sure that participants felt comfortable to express their views. Facilitators tried to re-assure participants that this was an evaluation, not an assessment of performance or exercise in fault finding, looking for what has worked well and less well in the programme. Facilitators also re-assured participants that participants did not have to answer questions they felt uncomfortable answering.
- 4) Some of the data and its meaning/implications might have been lost during translation even though all efforts were deployed to ensure data integrity. This was particularly relevant for the FGDs, which were conducted in local language.
- 5) The findings of the evaluation might have limited generalisability beyond its immediate study sites as it included a limited number of stakeholders(interviewed at a specific point in time). The aim of the study was specifically to evaluate the CHP in Rwanda; while some findings may be recognisable in community health programmes in other countries, generalisability to other settings is likely to be limited.
- 6) Data generated through FGDs could be subject to recall bias as women and men were asked to recall their experiences of consulting a CHW. This limitation was minimised by asking for recent examples (within the last 3 months) and by conducting a sample of 8 FGDs where results were categorised and compared to identify similarities and differences in responses.

4 FINDINGS

The following section presents findings according to the OECD-DAC criteria spelled out in the LSTM ToR for the evaluation. These include impact, relevance, effectiveness, efficiency and sustainability.

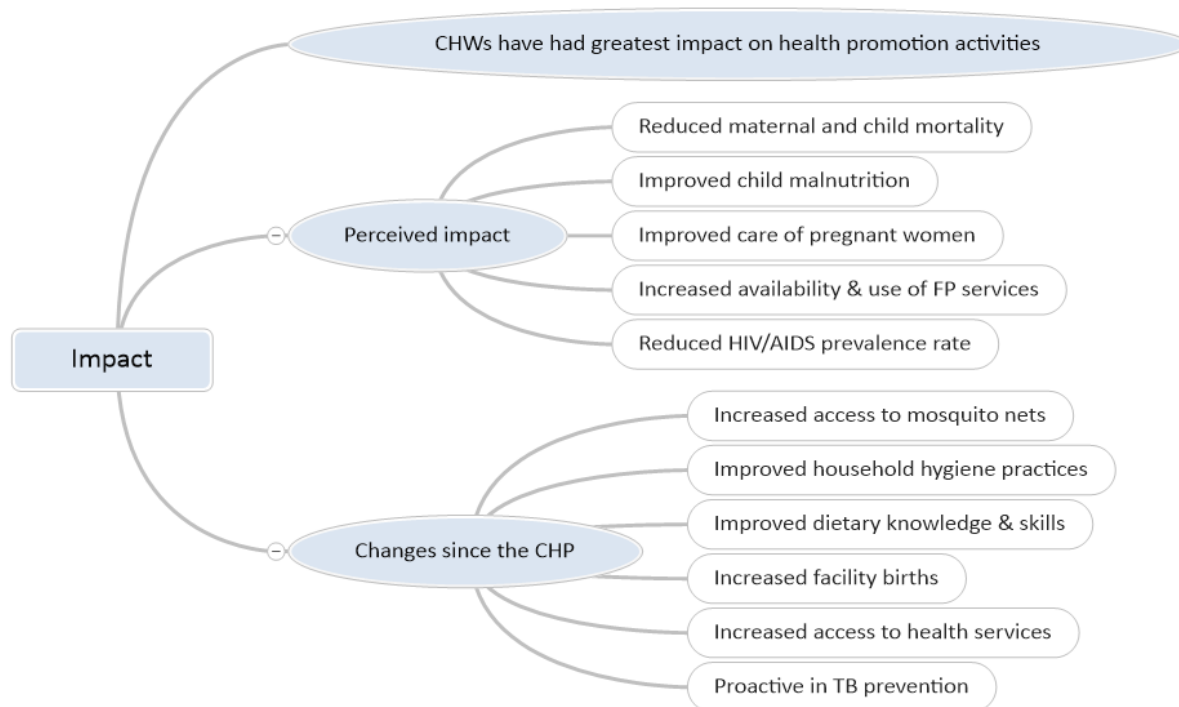
4.1 IMPACT

Evaluation question: Has the CHP contributed to improve the health status of women, new-born and children in Rwanda?

From the perception of the participants, the CHWs have had greatest impact on health promotion activities. The CHP had contributed to improved health status of women, new-borns and children in Rwanda. Specifically participants mentioned that the CHWs contribute most to maternal health and monitoring of child development is an important role for CHWs.

Figure 1 illustrates key themes relating to impact of the CHP, identified from data collected in the KIIs and FGDs. Participants discussed impact in terms of the most significant contribution of CHWs, their perceptions of impact of the CHP, and changes they had noticed since the introduction of the CHP. Each theme is described below.

Figure 1: Visual map of themes-relating to impact of the CHP



CHWs have had greatest impact on health promotion activities: From the FGDs with different community groups, health promotion activities such as education on household and personal hygiene practices were noted as significant contributions of the CHWs. Community women highlighted how

this had affected their personal hygiene practices and behaviour. Typically community members mentioned the impact of CHWs on hygiene practices rather than treatment of illnesses, for example: *“Before the CHWs came, a lot of households had a bad hygiene but we don’t see them anymore. A lot of people suffered from diseases caused by hygiene, some would even die especially small children”*. (FGD-2 women only. P-3).

Other members of the community mentioned how they did not ‘trust CHWs to dispense medicines appropriately’ which led them to seek care directly at the health facility instead of consulting CHWs. (Box 1. FGD-3 men only. P-8). In fact a common perception among the community groups (both men and women) was that people sought for help from the CHWs mostly for preventive activities, but in the case of a severely ill child, parents ‘head straight to the hospital’ without consulting the CHW. (Box 1. FGD-3 men only. P-9). Community groups regarded CHWs as an advocate for in promoting the community based health insurance (CBHI). (Box 1. FGD-1 men only. P-4).

Similarly district level key informants valued the preventive activities carried out by the CHWs over the curative activities.

Box 1. Illustrative Quotes-CHWs have had greatest impact on health promotion activities

FGD-3 men only. P-8. “Another problem is that the villagers don’t trust the health workers to dispense the medicines appropriately. There are fears that a child might overdose and die, so the villagers forego the health worker and head straight to the hospital.”

FGD-3 men only. P-9. “When your child is very sick most people head straight to the hospital as those are more urgent cases.”

FGD-1 men only. P-4. “because of the community health workers who told us about its importance. Before, I was telling myself that I never fall sick and neither my wife does, and that in case we fall sick or our child falls sick we will go to the private clinic, but now we are insured because the community health workers kept on educating us, and I always pay the community based health insurance on time.”

Perceived impact: Regarding perceived impact on mortality and morbidity, the CHWs who participated in the FGDs felt that they had contributed to reduced maternal and child mortality, child malnutrition and improvement in immunization of children. (Box 2. FGD-2 men only. P5). A typical comment included: *“The number of new-borns and mothers’ deaths has decreased because we encouraged mothers to give birth from the Health Centre. We also accompany them to the hospital when they are about to give birth so, everything turns out well.”* (FGD-3 CHW). Women in community FGDs also perceived the greatest impact of CHWs was on child mortality, mentioning that ‘children used to die’ due to parents’ ‘ignorance or lack of understanding’ before CHWs were available to educate them (Box 2. FGD-4. Women only. P-9).

Men and women in communities included in the evaluation also perceived that the CHP had helped reduce child malnutrition; increased availability and use of family planning services; care of pregnant women and reduce HIV/AIDS prevalence rate. (Box 2. FGD-3 men only). Similar findings were observed from interviews with key stakeholders across all categories. District, facility and community level key informants perceived that the CHP has impact on maternal and new-born deaths and child malnutrition. (Box 2. KIDI-26. P7. KIDI-15. P6). Additionally, district level respondents highlighted that there had been improvement in care of pregnant women due to continuous sensitization by the CHWs.

Box 2. Illustrative Quotes-Perceived impact

FGD-2 men only. P-5. "The health worker will advise the mother saying: "the child needs to take all the prescribed immunization". This way the child doesn't die from these diseases. Children no longer suffer from polio or measles. This is a valuable contribution CHWs have brought because such diseases no longer maim or kill like they did in the past."

FGD-4. Women only. P-9. "Children used to die in the villages due to their parent's ignorance or lack of understanding but now with the CHWs they come and teach them."

FGD-3 men only. P-3. "Another positive impact is that they weigh the children to make sure they are gaining weight accordingly. Those that haven't gained weight due to malnutrition are sent to the health centre, this is all thanks to the health workers"

KIDI-26. P-7. "...was able to reduce severe malnutrition and were able to improve best to reduce the death of new born and mothers. Yeah, so as we have positive results. We need to go really, to reduce till zero, all those cases, yeah the program is very relevant and now they are helping in malaria, they are helping in tube so the program of Community Health Workers is relevant."

KIDI-15. P-6. "As improvement over the years, I have seen the decrease of kwashiorkor for children and a decrease of home deliveries; at the moment it is very rare, it is an accident when it happens, and now there is also the follow up of newborns. "

Changes since introduction of the CHP: Men and women also commented on changes they had noticed since the introduction of the CHP. These included: increased access to bed nets; improved household hygiene practices; increased facility births; and reduced child malnutrition (Box 3. FGD-4. Women only). Community members described how 'thanks to the community health workers' children are weighed and monitored to ensure they are gaining weight, and those with malnutrition are referred to the health centre. They also described how the CHWs accompanied pregnant women to help them deliver in health facilities; followed up on the child growth; health education on family planning, etc. (Box 3. FGD-3 men only. P-1) Community women described how the CHP helps the community in taking initiative for TB treatment as CHWs 'encourage people suffering from cough for more than 3 weeks for TB check-up'.

CHWs who participated in the evaluation mentioned similar changes since the introduction of the CHP, emphasising their role in monitoring child growth and development by 'checking on the most vulnerable children' as well as meeting their nutritional needs by 'cooking for children every afternoon with their parents', explaining that these contributions had helped to reduce the malnutrition rate (Box 3. FGD-2 CHW).

Box 3. Illustrative Quotes-Changes since the introduction of the CHP

FGD-4. Women only. P-12. "So that is another achievement that they helped us reach, because it wasn't everyone who slept in mosquito nets. Some people would receive them and shelved them instead of sleeping in them."

FGD-3 men only. P-1. " What I have noticed in my village is that pregnant women are taken care of right from the moment they realize that they are pregnant. They are informed about the time at which they need to go to the hospital and in case they cannot make it, the Community Health Workers take them to the hospital. They take good care of them."

FGD-2 CHW. "We taught them that a balanced diet must contain the carbohydrates which provide the source of energy, proteins which growth materials and fats which provide vitamins for the diseases prevention. Anyway, we kept on teaching the parents and checking on the most vulnerable children. On top of that, we started cooking for the children of the village every afternoon together with their parents. We tested the children every week to keep up with their conditions, so after some time we found that the children have increased their weights and that is how the malnutrition rate was decreased."

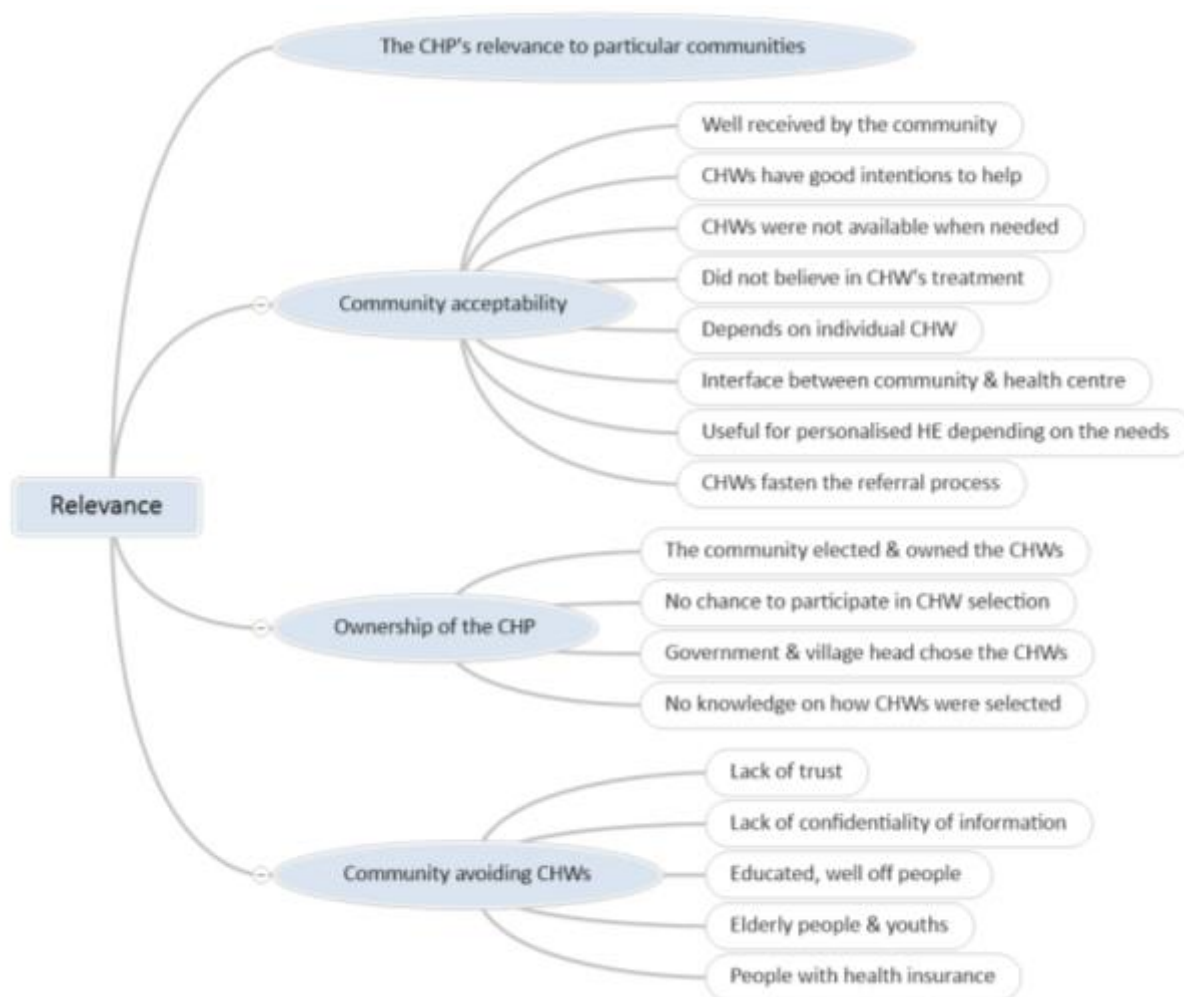
4.2 RELEVANCE

Evaluation question: Is the CHP relevant to needs and priorities of the communities? How well is the CHP accepted and owned by the community?

The CHP was more relevant for remote, rural areas particularly in hard to reach areas where there were shortages of health workers. Communities tend to accept CHWs depending on their behaviour, attitude and services provided to their community. Higher socio-economic groups avoid using CHWs and community less involved in recruitment and selection of CHWs.

Figure 2 illustrates key findings observed from KIIs and FGDs in regard to the relevance of the CHP. Key themes identified relate to acceptability, ownership of the CHP, its relevance to particular communities and groups that tend not to use CHWs, each of these themes is described below.

Figure 2: Visual map of themes relating to relevance of the CHP



Relevance to particular communities: Key informants at national and district level described how the CHP was more relevant for remote, rural areas, particularly in hard to reach areas where there were shortages of health workers. Participants at national level mentioned the importance of the CHP given that ‘the number of health professionals is small’, commenting that the government cannot employ sufficient staff to ‘reach the community level’ (Box 4. KIC-9. P-18). District level participants described how CHWs had reduced the workload of the health centres by treating some minor illnesses which

could be handled at community level (Box 4. KIDI-9. P-7,8). While key informants at national level explained how CHWs were an important component in the national disease outbreak response activities, such as malaria (Box 4. KIDI-16. P-19).

Box 4. Illustrative Quotes-Relevance to particular community

KIC-9. P-18. "it is really very important to have it. It is very important because they are doing a lot of work that the health professionals... the numbers of the health professionals are small and the government cannot employ so many to reach at the community level like other countries that have developed...Because they are reaching the Community Health Worker. It reaches where a professional cannot reach."

KIDI-9. P-7,8. "...we try our best to reinforce the ability of our CHWs and invest in them because they work hand in hand with our health posts and with our health centres. So, in the future, we look to health centres as facilitators because if we invest more in the CHWs they can do everything in our village, they can be more in our village so when we get the money, and even we have a limited budget, we can take some money of that limited budget and invest in CHWs."

KIDI-16. P-19. "we cannot expect people with malaria or others with malaria to come to the Health Centres when it is so you know huge like that. Many people had got malaria. So this time it was like an emergency. The government had to get the resolution. So we said ok now these people [CHWs] have been doing preventive and they have allowed them to give... to treat children, emergencies in children."

Community acceptability: There was a general impression among national level respondents that the CHWs were well received by their respective community as they were elected by their fellow community. This view was also reflected in some community focus group discussions; men and women commented that CHWs have good intentions towards the wellbeing of their community and were generally well received by their community (Box 5. FGD-2 women only. P-17). However, community acceptance of the CHWs seemed to depend on the behaviour of individual CHWs. For example, in one community discussion men explained that not all CHWs 'offer services in the same way' and how a CHW who provides 'good services and accomplishes his or her tasks is indispensable', but if they do not, 'no-one values their contribution. (Box 5. FGD-3 men only. P-15). CHWs' practice also appeared to vary, for example in the care of pregnant women, women explained how some CHWs would be proactive following up pregnant women right from the beginning of their pregnancy, while in other villages women can 'have still births without the CHW knowing' (Box 5.FGD-4. Women only.P-7,8).

Most CHWs felt that they were well received by their community. In the words of a CHW participated in the evaluation: *"I think that people feel free to consult us in all their daily activities. That is because; we provide them advice in many different things such as paying for insurance, treating their children and the available services from the HC. They are always interested in listening to what we say which shows that they have trust in our abilities"* (FGD-2 CHW only. P-13). Community women believed that community participation is secured by attending meetings organised by CHWs and using their services. (Box 5. FDG-2. Women only. P-8)

However, some community groups were less satisfied with the services provided by CHWs. Men and women described how CHWs were often not available when they needed them because they were engaged in other income generating activities (community members realised that CHWs did not get paid). In some situations, the community found CHWs unable to help because they were 'drunk' or engaged in other activities that meant they could not provide services (Box 5. FGD-3 men only. P-3). Community tend not to accept the CHWs if they do not follow their social norms as one community

woman noted how they were ‘concerned’ when they saw a CHW a CHW being ‘promiscuous’ because they were ‘setting bad example.’

CHWs are seen as an interface between the community and the health centres as they hasten the referral process by ‘calling an ambulance’. In addition, in cases when the community cannot pay some health insurance, CHWs acted as ‘judge and jury’ or ‘advocate’ from the community side (Box 5. FGD-4 men only. P-14). Community found CHWs have been useful in providing health education to marginalised groups such as ‘teenage pregnancy who has been neglected by her family’ and ‘orphan girl who became pregnant’. Indeed, some community members appreciated CHWs for their personalised health education depending on the needs of the family within their community. (Box 5. FGD-1 men only. P-24).

Box 5. Illustrative Quotes-Community acceptability

FGD-2 women only. P-17. "...they put their own businesses aside and come to visit people even though people have many responsibilities in life; the way I see it; they really try their best"

FGD-3 men only. P-15. "That depends on how they provide their services. If there are 3 health workers in the village, they don't offer their services in the same way. If a health worker provides good services and accomplishes his/her tasks, then they are indispensable but if they don't then no one values their contribution."

FGD-4 women only. P-7,8. ""I find that they aren't proactive. In other villages once it is rumoured that a woman is pregnant even if it isn't true, the CHW approaches her and gives her advices. When it is true (that she is pregnant) the CHW looks after her until she goes to the hospital. But in my village even visiting alone, they don't do... they can have still births without the CHW knowing."

FDG-2. Women only. P-8. " I think we contribute by listening and being truthful when they come to visit us and advise us".

FGD-3 men only. P-3. "you might take your pregnant wife to see the health worker and you find him drunk. He is incapacitated and unable to help."

FGD-4 men only. P-14. "I consider CHWs as advocates. In case I paid for health insurance but don't have the card yet, a CHW will go with me to a health centre to validate what I'm saying. Also if I'm sick and a CHW carries to a health centre, I'll receive treatment... Like Respondent 10 mentioned, CHWs are held in very high esteem in our village. For example, you are usually charged 1000frw to use an ambulance but with a CHW accompanying you, then you only pay much later. So a CHW is judge and jury. Also when you go to a hospital without knowing any doctor, a CHW is there to help you out."

FGD-1 men only. P-24. "...for instance, a family that needs to be sensitized about hygiene because they don't bath their child, or family that has malnutrition cases so that he/she can sensitize them, because they may not get it right if I am the one who does it."

Ownership of the CHP: Views on ownership of the CHP by communities varied. Key informants at national level understood that CHWs are elected by the communities they serve, and therefore the community felt they had some degree of ‘ownership’ of the CHP, and valued the work of the CHWs. However, some community groups complained about lack of opportunity to participate in selection of the CHWs. Both men and women groups stated that they had no knowledge on how the CHWs were selected in their village; some community members felt that it was the top-down decision made by the government and the village leaders. Community members also expressed a desire to be more involved in the selection process, suggesting village residents ‘should appoint CHWs’ because residents are ‘better acquainted with the work ethic of a CHW’(Box 6. FGD-3 men only. P-21).

Box 6. Illustrative Quotes-Ownership of the CHP

FGD-3 men only. P-21. "The village residents should appoint CHWs instead of the government or community leaders. As a resident I am better acquainted with the work ethic of a health worker. This way the person who gets majority vote is appointed."

Community avoidance of CHWs: One reason for community members avoiding CHWs was lack of trust in the CHWs; both men and women shared this view and explained how they thought CHWs did not respect confidentiality of the information shared with them. For example, in one discussion with men, they explained how community health workers share information 'without approval' and if community members discovered that a CHW had revealed information they would seek care at the health centre instead. (Box 7. FGD men only. P-22). Other community members explained how they would either go straight to the health centre or to a CHW from the next village so that their information could not be shared with other people from the same village. However, this was contrary to the views expressed by national level key informants, who were of the opinion CHWs received the most trust from their fellow villagers.

During FGDs, community members described how some groups tend not to use services of the CHWs, and these included young, educated and well off people with health insurance as well as elderly people who rarely welcome CHWs. Age was also identified as a barrier by key respondents who mentioned that they are not so good in gaining new skills. Indeed, there were some community groups who questioned that most CHWs were quite old, and this impacted their ability to retain and apply the knowledge and skills they had learnt from the training. During FGDs community men suggested that CHWs should be of different ages and that educated youths could be trained as CHWs. (Box 7. FGD-3 men only. P-13). The CHWs made similar comments, mentioning how educated, well off people with health insurance tend not to consult them, often because they think CHWs are 'not qualified to treat their children' and they 'don't trust' CHWs (Box 7. FGD-1 CHW. P-8).

Box 7. Illustrative Quotes-Community avoidance of the CHWs

FGD men only. P-22. "Another challenge is the [community] health workers that share your information without approval. If a village resident finds out that a [community] health worker is revealing information, then they will go to the health centre."

FGD-3 men only. P-13. "I think that they should appoint different health workers for different categories. If I'm 20 years old, then I can't share my problems with a 50-year-old female health worker. I would prefer to discuss with a health worker who is my peer because it would be easier. For example, a girl who fears having contracted AIDS due to unprotected sex will open up more to a fellow female health worker her age. As we mentioned earlier, the health workers will focus on married couples with children because they are peers at the same level. Therefore, a married woman will sit down with a female health worker and discuss her problems compared to youth who avoid this."

FGD-1 CHW. P-8. "They are mostly the rich ones. They used to refuse receiving the health services from us saying that we didn't study medicine hence; we are not qualified for treating their children. So they chose to go to the HC, in fact the HC used to question why they didn't come to the CHWs and they would respond that they don't trust us."

4.3 EFFECTIVENESS

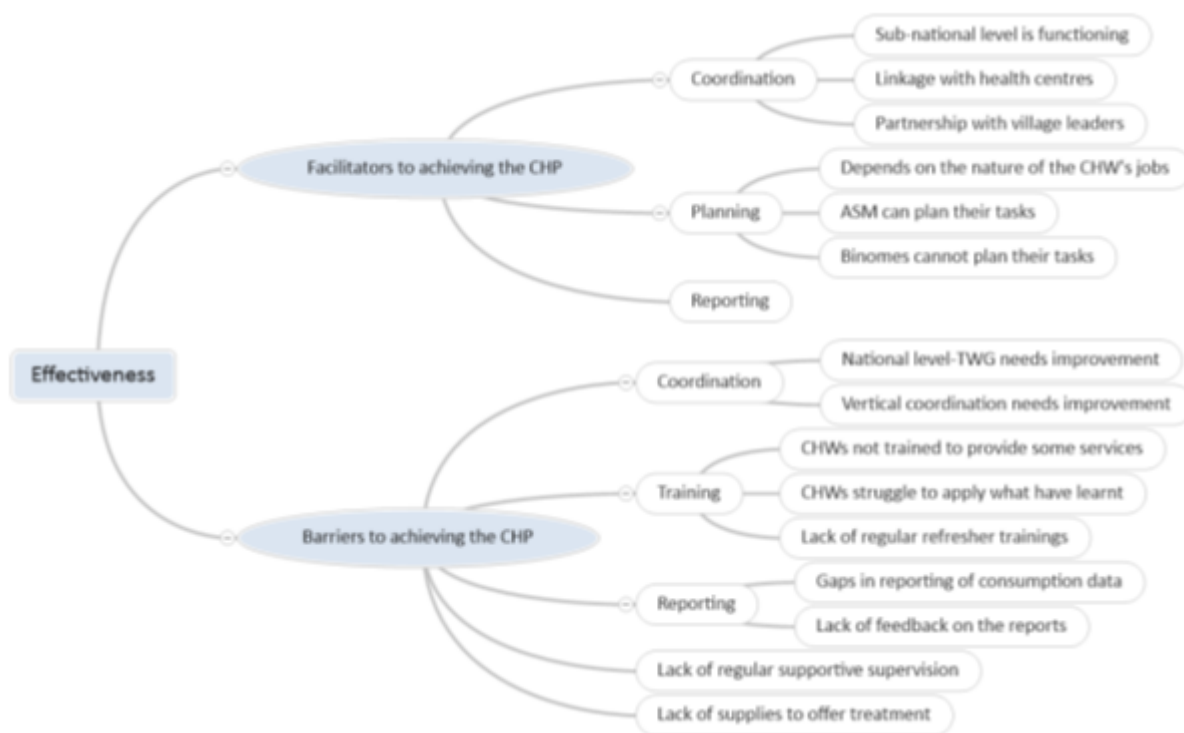
Evaluation question: What are the main facilitators and barriers to achieving the objectives of the CHP?

The main facilitators to achieving the objectives of the CHP appear to be the coordination of CHW activities at different levels of the health system as CHWs enjoy good linkage with local health structures. Barriers to achieving the CHP objectives included lack of efficient supply mechanisms for CHWs, need for better developed supervision structure for CHWs, training often not timely nor relevant to needs and education level required of CHWs to perform the assigned tasks.

The analysis revealed two key aspects affecting the effectiveness of the CHP. The first relates to the facilitators influencing the achievements of the CHP and the second to the barriers to achieving the CHP.

Figure 3 illustrates key findings observed from KIIs and FGDs in regard to effectiveness of the CHP.

Figure 3: Visual map of themes relating to effectiveness of the CHP



Facilitators to achieving the CHP objectives: Most participants felt that the existing **coordination mechanisms** at national and sub-national level were functional (Box 8. LDA KII-3. P-5). Views about ‘vertical coordination’ between CHWs and health centres, differed across different levels of the health system. CHWs explained how they shared roles and referral practices between binomes and ASMs (Box 8. FGD-CHW-3. P-25). In addition, there seemed to be coordination between CHWs in terms of sharing supplies and equipment (Box 8. FGD-CHW-1. P-6). CHWs also mentioned how they worked hand-in-hand with village leaders and how they received support from them. In some villages, the village leaders supported the CHWs in a way that they did not allow the villagers to build latrines without approval from the CHWs. (Box 8. FGD-CHW-1. P-11).

CHWs also shared their experiences in regard to **planning services**. Due to the nature of work, the ASMs were better able to plan than binomes. ASMs could set up their planning visits to pregnant women on a scheduled basis while the work of the binomes were unpredictable. (Box 8. FGD-CHW-3. P-20; FGD-CHW-3. P-20). **Reporting mechanisms** were also discussed positively by CHWs and other stakeholders. CHWs report community health data either manually, for medicine consumption data, or via mobile phone (SMS) for epidemiological data. Most national level respondents participated in the evaluation commented that CHW reporting was useful as they received the information that they were looking for. (Box 8. KIDI-24. P-5).

Box 8. Illustrative Quotes-Facilitators to achieving the CHP

LDA KII-3. P-5. "...we have quarterly coordination meetings bringing together those 30 in charge of community health workers meeting with this unit just to discuss challenges, constraints and try to find solutions. "

FGD-3 CHW. P-25. "I think our working relationship is sufficient and the reason is because we are three CHWs in one village which means that there are two Binomes and one ASM. So, we usually divide responsibilities based on geographic areas which means that every person has a place that he/she is responsible for."

FGD-1 CHW. P-6. "In some cases, some of us don't have the pills so what we do for those who come to us, is to send them to another CHW who have them."

FGD-1 CHW. P-11. "no one is allowed to ask the permission of building a toilet from the village leader without the approval of the CHW. It means that, everyone in need of such service has to first get a written permission from the CHW and then the village leader can sign after."

FGD-CHW-3. P-20."my plan as an ASM is to visit the pregnant women at their homes on Saturday which means that I spend the whole day doing that. Then on Sunday after returning from the Church, I pay the home visits to the post-natal mothers. It means that, I provide services as the CHW twice a week"

FGD-CHW-3. P-20."For us the Binomes don't really have a working plan because we never know when we will receive a sick child. I mean one could fall sick anytime, so we could receive a patient today, tomorrow or even in the middle of the night. So you understand that we cannot plan for what we don't know. Except for those who need the family planning services, we set a meeting date for them. However, sometimes we receive 8 people in one day but different hours and then 5 or 3 for the following days."

KIDI-24. P-5. "the reporting is going well from the village to the Health Centre, <<Yeah>> compilation how the data are coming from the community, how it is compiled at the cell level and how it arrive at the Health Centre and then to the Ministry of Health, I think the data sharing is working."

Barriers to achieving the CHP objectives: While some informants discussed **coordination** was functioning, a few respondents felt that the technical working group (TWG) at the national level needed to be improved due to inaccurate reporting of some stakeholders (Box 9. KIC-39. P-7). Others also highlighted supply shortage as an example of inefficient vertical coordination between the CHW and the health centre. (Box 9. KIDI-18. P-3).

Another barrier was the CHWs **lack of supplies to be able to offer treatment**, particularly the medicines for children. This efficiency gap has been discussed in details under the "efficiency" section below. Community women groups who participated in the FGDs confirmed that when they brought their sick children to the CHWs, there used to have lack of medicines. Hence, they would rather bring their child to the health facilities directly when the child was severely sick as they thought that it was beyond the capacity of the CHWs. The other supplies shortage complained by the CHWs was shortage in family planning medicines. CHWs shared their sentiment that recently they were asked to provide family planning services including injection. However, there were instances when they had to turn away their clients as there were shortages of family planning commodities.

Lack of regular supervision was a barrier to achieving the objectives of the CHP. CHWs felt that supervision from the health centres should be regular as they valued and felt supported for those supervisory visits. (Box 9. FGD-CHW-1. P17). However, the busy schedule of the health centre staff prevented them from conducting regular supportive supervision. (Box 9. FGD-CHW-1. P-16). National level respondents were aware of the situation as they stated that ‘the supervision is not well done regularly’ and the ‘supervision from the health centre needs to be strengthened’ (Box 9. KIDI-19. p-5). Lack of human resources at health facilities was a reason for gap in supervision highlighted by the KII respondents. There were some district level respondents who felt that the CHWs should also receive on the job supervision to improve in their management of medicine stocks. (Box 9. KIDI-17. P-12). Some respondents felt that it was risky to let the CHWs unsupervised. (Box 9. KII-16. P-20) Hence, some national level respondents recommended integrated trainings and supervisions in order to maximize resources. (Box 9. KIDI-16. P-11).

The other important aspect influencing the objectives of the CHP was **training**. CHWs recalled that not every CHW received the initial trainings which the newly recruited CHWs were supposed to receive. Hence, they faced challenges to perform their tasks as they did not receive the training (Box 9. FGD-CHW-1. P-18). Additionally, for those who had received the trainings, they did not have a chance to apply what they learnt from the trainings and hence they lost their knowledge and skills. (Box 9. FGD-CHW-3. P-10). According to the CHWs, either there was lack of immediate needs or lack of supplies when there were needs.

Nevertheless, every CHWs participated in the FGDs appreciated to receive trainings as the trainings have increased their confidence and esteem. However, CHWs felt that there were less trainings than as they should receive. (Box 9. FGD-CHW-4. P-30). This comment was agreed by the national level respondents as they were aware that limited resources did not allow them to provide required trainings for the CHWs. (Box 9. KIDI-23. P-10). District and facility level respondents highlighted that without having initial and regular refresher trainings where CHWs could apply their knowledge and skills, the program could not be improved. (Box 9. KIDI-34. p-5) Community respondents suggested to have more educated CHWs in order to improve the CHP. Community members felt that the ability of the CHWs depended on their level of education. (Box 9. FGD-4 women only. P-28).

The other barrier to achieving the CHP was **reporting** and use of information collected by the CHWs. Some national level respondents felt that information were not used enough at sub-national level even though the CHWs have collected and reported the information. (Box 9. KIDI-18. P-13). More importantly, CHWs did not receive any feedback about the quality and information they provided. CHWs have been complained for the quality of their reports, particularly in regard to their medicine request and consumption (Box 9. KIDI-17. P-4). Additionally, while there were acknowledgement about the usefulness of Rapid SMS in providing emergency services to pregnant women, many CHWs were struggling to send the Rapid SMS (Box 9. FGD-4 CHW. P-5. FGD-1 CHW. P-24). Most common challenges cited by the CHWs include lack of handset, lack of electricity/facility to charge and being uncomfortable in using the gadget among older CHWs. Interestingly, female community groups were also aware of the CHW reporting as they perceived the CHWs visits as serving the purpose of the report (Box 9. FGD-4 women only. p23).

Box 9. Illustrative Quotes-Barriers to achieving the CHP

KIC-39. P-7. "I think the coordination is well structured but what we need is to improve the work of this technical working group, sometimes different stakeholders and partners are not reporting correctly."

KIDI-18. P-3. "In one village, there could be running out of stock while in another village they might have over stock, but the reporting system only sent us some data, provided us data at the Health Centre level, so it was all averaged out. It looks like the Health Centre as a whole is ok, but at the individual level, they might have had stock outs or over stocks."

FGD-CHW-1. P17. "I think it is good to get visited by the people from the HC because even our neighbours get to see that we are important people since the health centre itself come to visit."

FGD-1 CHW. P-16. "Actually, their plan always includes visiting us on a monthly basis. But sometimes, they have busy schedule which prevents them from coming."

KIDI-19. P-5. "They have very good data and quality information. As they are part of the system, they are correcting, we need to provide feedback, showing how they can use information to serve the community."

KIDI-17. P-12. "Another suggestion for me that I am asking myself is I should be there when they see; observe how they advise the people how to take drugs, the side of those effects those that may happen."

KII-16. P-20. "You don't know the consequences because you were not there. And because there is no good supervision you cannot know even how many cases of malpractice you are getting from the community."

KIDI-16. P-11. "Integration, the integration of supervision maybe would be better than a few going and you know maybe the integration would work better and maybe it would reduce the amount of work, amount of movement, amount of money."

FGD-CHW-1. P-18. "I am the only CHW who got the training in my village because others are new since they joined the CHWP as the replacements. So it is challenging to my colleagues to perform their tasks while they didn't receive the training."

FGD-3 CHW. P-10. "It is true that we receive trainings but sometimes we forget what we have been taught which also affect our abilities. On top of that, sometimes it requires certain skills which we don't have, plus that we tend to forget what we have been trained in, so receiving trainings repeatedly help us to remember."

FGD-4 CHW. P-30. "I think that there should be repetitive training about everything that we do as the CHWs including treating people and Family Planning. That is because every year, some CHWs leave for different reasons and the new ones join."

KIDI-23. P-10. "Under Global Fund, we didn't have money to do training these two years."

KIDI-34. p-5. "In order to improve the quality of service, they need to be trained regularly, not to be trained once."

FGD-4 women only. P-28. "What I think would be helpful is if a CHW should have an intermediate education level so that the people of a certain social standing can regard them with respect."

KIDI-18. P-13. "they use at central level mainly for reporting – that there is not enough routine use at different lower levels."

KIDI-17. P-4. "the main challenge is when they are reporting, they report wrong data."

FGD-4 CHW. P-5. "Another thing that allowed us to achieve the goal of reducing the mothers' death rates is the system of Rapid SMS. Sometimes it is too hard for the pregnant woman to walk or get on the motorcycle in order to reach the HC for delivery. But with the Rapid SMS, the HCs are informed about her condition and immediately send the ambulance to get her."

FGD-1 CHW. P-24. "But after all, the training went well and we like it because we even got the chance to know about the Rapid SMS but many of us didn't know how to send it."

FGD-4 women only. P-23. "They sometimes come into the village needing to write a report of children aged less than 5; they weigh them and give them pills for intestinal worms, and they sensitize people about it and they write down the people who they gave that service to. When the day comes they check on that report that you were there and tick down your presence and then tend to you."

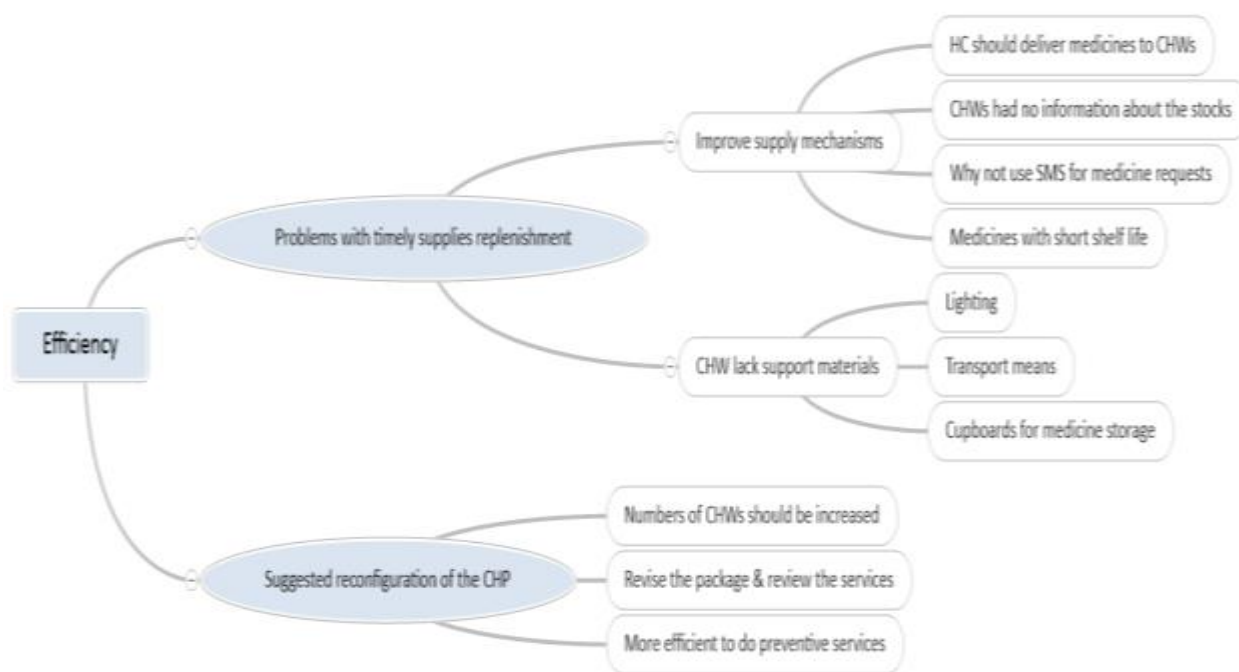
4.4 EFFICIENCY

Evaluation question: Are the available resources used efficiently to achieve the program objectives?

There were problems with timely supplies replenishment due to shortage of supplies and communication gap between the health centres and the CHWs; and suggestion to reconfigure the CHP to focus on preventive services.

Figure 4 illustrates key findings observed from KIIs and FGDs in regard to efficiency of the CHP.

Figure 4: Visual map of themes relating to efficiency of the CHP



The analysis revealed two key aspects affecting the efficiency of the CHP. The first relates to problems with timely supplies replenishment, and the second reflects suggestions on how the CHP could be reconfigured for greater efficiency.

Problems with timely supplies replenishment: Almost every CHW complained about their access to medications and shortage of supplies. When CHWs requested to refill their completed stocks, they had to wait for some time for the replenishment. CHWs described how they received medications for a month, but when these are finished they ‘don’t immediately receive’ more supplies, and in some cases this could take ‘two months’ (Box 10. FGD-1-CHW. P-17).

District level respondents were aware of the situation stating that the reasons were due to delay and stock out at central level. (Box 10. KIDI-10. P-12). According to the CHWs, the problem regarding supply shortage was compounded by the way the health centre coordinates distribution of supplies to CHWs. During group discussions CHWs explained how the health centre staff waited to collate the requests from all CHWs before issuing re-supplies. For example one group explained that individual CHWs are not allowed to replenish supplies, rather they must ‘wait until all the CHWs come to get supplies’ (Box 10. FGD-4-CHW. P-12). Additionally, lack of communication between the health centre

and CHWs could lead to inefficient methods for distributing new supplies. For example, CHWs described sometimes making long journeys to health centres only to find the stock had not arrived. Others suggested ways in which communication could be improved through use of SMS to inform CHWs when to collect new supplies, or delivery of supplies by health workers during supervision visits to CHWs (Box 10. FGD-4 CHW. P-14).

Another factor CHWs identified as contributing to their poor access to drugs and supplies was that they often received **medicines with short shelf life**. This was significant in cases where CHWs did not have any client to prescribe that particular medication and hence, those medicines expired in their hands. CHWs felt that they were blamed for being ineffective in reporting and managing their medicine stocks, but they had never been asked to record the expiry dates of those medicines when they received from the health centre.

Key informants at facility level were aware of the short shelf life of medicines and stated that these were the items they received from the central medical stores. Regarding the CHW's access to medication, district level respondents felt that the CHWs did not have sufficient knowledge and skills to dispense all the medications and so they withheld some drugs to protect the community from inappropriate prescribing . (Box 10. KIDI-10. P-7).

In addition to access to medicine supplies shortage, the other influencing factor regarding efficiency of the CHP was **lack of support materials for the CHWs** such as torches, transport means and cupboards for medicine storage. CHWs complained that they could not accompany the woman who was in labour at night as it was so dark to travel at night. The community women participated in the FGDs were aware of the situation as well. Hence, they felt that it would be useful if CHWs were provided some transport materials in order to provide better assistance to the community. In the words of a community woman: *“among the things that CHWs need is transport, and being paid on time and an ample salary because they sometimes look like they themselves have problems and asking for their assistance looks like burdening them.”* (FGD-4-women only. P-28). Indeed, some community women would rather go straight to the health centre as the CHWs could not provide any meaningful support.

Box 10. Illustrative Quotes-Problems with timely supplies replenishment

FGD-1. CHW. P-17. “We receive the medications which are supposed to last for a month, but then they get finished after before the end of the month. But the problem is that we don’t immediately receive the other medications after they are finished, rather it takes two months to receive them again.”

KIDI-10. P-12. "we can push the order now, when they are validating quantity to deliver, you can have sometimes when you ask for 50 boxes of a given product they give you zero because of the stock is out from the central level, when we ask why, they tell you it is because of the process of procurement at the central level which are delaying."

FGD-4. CHW. P-12. "We do have problems with the medications. The Health Centre usually provides a small quantity of medications...we are not allowed to take others immediately after finishing the first round, rather we have to wait until all the CHWs come to get them."

FGD-4 CHW. P-14. “...the medications should be delivered to us. Or, we should be given the bicycles as the other CHWs received them”

KIDI-10. P-7. “it is only used at the hospital, and now it is going to be used in the community how can community health worker can control the effect.”

Reconfiguration of the CHP: The second key theme relates to suggestions on how the CHP could be reconfigured for greater efficiency. Suggestions from key informants included increasing numbers of CHWs, revising the package of services provided by CHWs, and directing the focus of CHWs role towards preventive services. Interview respondents participated in the evaluation discussed about the numbers of CHWs, especially to improve the efficiency of the CHP. There were participants who felt that **the numbers of CHWs should be increased** in order to overcome the workload they had. In the words of a national level respondent: *"sometimes everyone wants to use them...because everyone who want to come to the community...even out of the health sector want to use these people because they are reaching the communities very easily and then they know everyone..."* (KII-39. P-3,4).

On the other hand, others thought that the program should **revise the package and review the services** which CHWs were asked to do. Some respondents believed that there is a need to regularly review the package of CHPs to reflect the changing needs of the population. In the words of a national level respondent: *"I think reducing number will be good, because this what makes program strong...See exact package, they can provide, that is making an impact, that is manageable."* (KII-9. P-8).

There seems to have a unanimous view among respondents across all health system level as they recommend that the CHP should focus on the preventive services. Indeed, some national level respondents perceived that the CHP would be **more efficient** if CHW were only asked **to do preventive measures**. These respondents felt that the health centres should cover well the curative health services for the community. Some community groups felt that the CHWs should receive specific trainings on how to approach and educate hard-to-reach groups such as people living with HIV/AIDS or widow. (Box 11. FGD-1 women only. P-20). Indeed, some district level respondents commented that asking CHWs to deliver curative activities required close follow-up and regular on-the-job training. By so doing, there would not have efficiency gaps due to supply shortages which the CHWs were currently facing. Having said that, there was one national level respondent who felt that the CHP was more cost-effective than the facility based care. Hence, the country should plan properly in order to task shift some curative activities to the CHWs. (Box 11. KII-18. P-7).

Box 11. Illustrative Quotes-Reconfiguration of the CHP

FGD-1 women only. P-20. "CHWs need more trainings about those two groups [HIV/AIDS positive people and widow]. They need trainings to teach them how to take good care of those people and talk with them."

KII-18. P-7. "there's been this upsurge in malaria and I think the Desk has come to some agreement with the community based health insurance people, that they will actually get some kind of reimbursement for malaria patients treated. And they treating not only the children but also the adults. And in a way they are delivering the same service that was normally only available at Health Centre level. And they are providing it at a much lower cost. Business case can be made for insurance fund to reimburse and push task shift down."

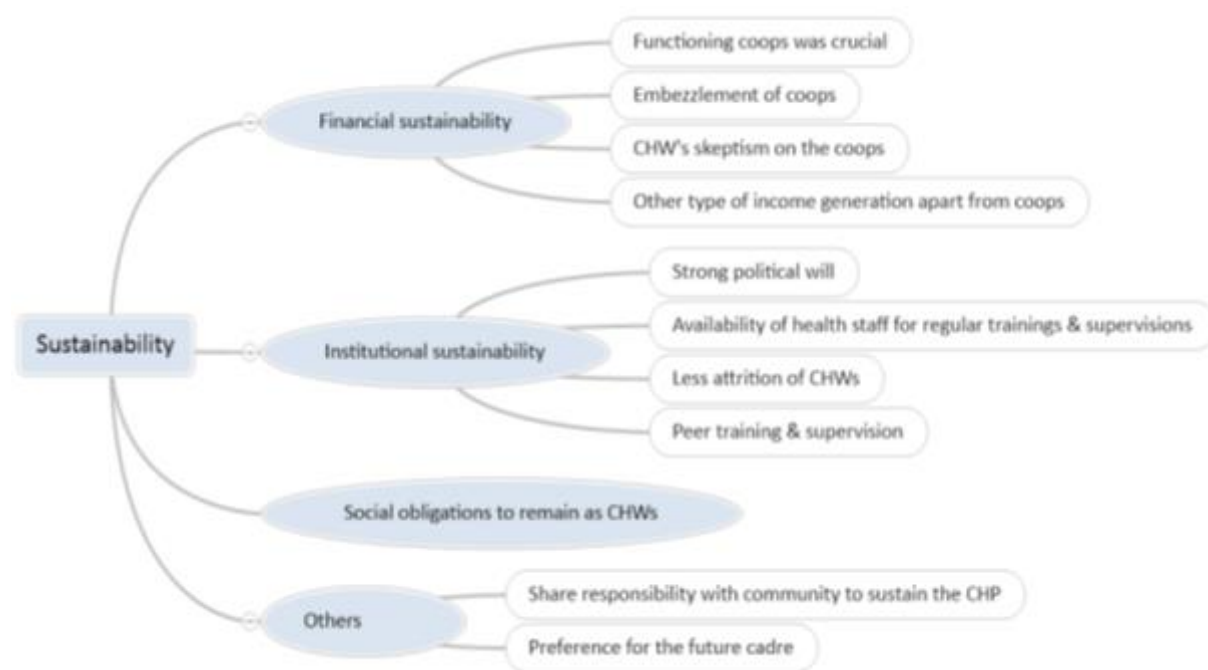
4.5 SUSTAINABILITY

Evaluation questions: What are the main factors influencing the sustainability of the program in future? To what extent and how are the program results likely to be sustained in future and under what scenarios?

There was strong political will to support the sustainability of the CHP even though there were challenges to sustain the programme financially. CHWs had social obligations to serve their community regardless of the financial compensation.

Figure 5 illustrates key findings observed from KIIs and FGDs in regard to sustainability of the CHP.

Figure 5: Visual map of themes relating to sustainability of the CHP



Respondents who participated in the interviews discussed three key factors influencing sustainability of the CHP. These included financial sustainability, institutional sustainability and social obligations from the CHWs. Interview respondents across all categories felt that without proper financing, there would be no prospect for the CHP.

In terms of **financial sustainability**, the functionality of cooperatives was a general comment noted by KII respondents. Almost every interview respondent was aware of the challenges faced by the cooperatives. However, they did not have an alternative solution apart from reinvigoration of cooperatives.

For CHWs who participated in the FGDs, they were sceptical about the cooperatives as they lost trust in the cooperatives, particularly with what they experienced with the corrupt practices of the cooperatives. KII respondents were also aware of those scandals regarding embezzlement of the cooperative funds. Hence, CHWs queried the fact of investing in cooperatives as they did not generate any funds. Instead, they felt that the cooperatives divided the CHWs and provided opportunities to abuse the pooled funds of the cooperatives. Indeed, in addition to reviving and strengthening the

capacities of the cooperatives, informants suggested financial accountability measures must be in place to prevent embezzlement of the funds. Some CHWs highlighted that other types of income generation activities would be more relevant than the cooperatives to their community. One example suggested by the CHWs was the agriculture group fund supported by an NGO called CARE. (Box 12. FGD-3-CHW. P-26).

Another factor influencing the sustainability of the CHP was institutional sustainability. Of different factors regarding institutional sustainability, national level respondents perceived that there was strong **political will** to sustain the CHP. In the words of a national level respondent: *"even the President because I remember he has been really engaging with the community health workers personally...from the President to the Ministry which brought in the idea meaning through the Minister, then the Minister working with the local government entities at central level, then local government (ministry actually) dealing with decentralized levels, explaining how this system and program is going to work on basis of volunteerism, in having people volunteering for that."* (KII-3. p-3).

Hence, some respondents believed that the government would find a way to sustain the program somehow. Other institutional factors influencing the sustainability of the CHP were the **numbers of health staff available to provide regular supportive supervision and refresher training** for the CHWs. Respondents believed that without adequate supervision and training, the knowledge and skills of CHWs could not be sustained. Indeed, there were some national level respondents who suggested to have peer support and supervision among the CHWs themselves in order to sustain the program cost-effectively. The same respondent suggested to appoint outstanding CHWs as peer supervisors who could, in turn, provide on-the-job training and supervision. (Box 12. KIDI-24. P-14).

Attrition of the CHWs was another influencing factor influencing the CHP, which in turn depended on the work load which CHWs had. KII respondents perceived that the program lost what they have trained and wasted their resources due to turnover of the CHWs.

Despite the concerns of sustainability among KII respondents, CHWs participating in the FGDs shared their perception of their role, if there was no financial support in future. Almost every CHWs felt that they had **social obligations** to remain as CHWs as they received trust from their community and they worked for social good. Though they did not receive any financial incentives for being a CHW, they received some social status within the community to be elected as a CHW. Hence, most CHWs commented that they would continue to serve as a CHW whether they received any monetary support or not. In the words of a CHW: *"When I tell them that I am thinking about leaving my position, they beg me to stay because I have done so many things for them. And for that, I also cannot turn my back on their sincere request which means that I have reached at the level where money does not matter anymore."* p-27." (FGD-1-CHW. P-27).

From the perspectives of some CHWs, the CHP would not be successful nor sustained without **security**. In the words of a CHW: *"I was also going to say exactly what Resp7 said, insecurity is the only thing that could delay the development of the country. It means that without the security, nothing can be done effectively which is why we should maintain the safety of our country. Otherwise, we could face many problems."* (FGD-3-men only. P-37)

There was some suggestion regarding sharing responsibilities to sustain the CHP. Some district level respondents suggested to have **shared social responsibility between the community and the CHWs**. They highlighted that the community could support the CHWs financially if they needed their services.

With some support from the national government, the community should be able to contribute to support the CHWs which were useful for their community. In the words of a national level respondent: *"we can tell the community to pay incentives...the community can have some payment to the Community Health Worker, they can contribute to the payment"* (KII-20. P-13)

Community groups participated in the evaluation expressed their **preference for the future cadre** of the CHWs. Some community groups discussed about succession planning and recruitment of younger CHWs as they felt that younger CHWs would be easier to train and retain knowledge. (Box 12. FGD-2-women only. P-19). This was also discussed among the community men under the "Impact" section. However, some national level respondents disagreed with such recommendation as they felt that by recruiting younger CHWs, they would have higher turnover as the younger population groups would be more mobile than the senior ones.

Box 12. Illustrative Quotes-Sustainability

FGD-3 CHW. P-26. "I think we could put our ideas together and achieve great things. Besides, sometimes we need money to pay the health insurance and borrow from them. That is because the groups like CARE usually have a saving account, so it helps when you need to pay the insurance early because we are allowed to borrow money any time."

KIDI-24. P-14. "... there are those who are more skilled than others ... they can be like peer. They can be teaching others, they can be TOT and also they can just coach others, that is the system I think it can sustain. The cost can be low, other thing I think for the Health Centre I can advise to create even I know that they are not far, they can be linked to them. But I can use the peer that can be good role model, mentorship between them."

FGD-2 women only. P-19. "I personally feel like those people should be taught how to read especially those who are still young."

5 CONCLUSION

Based upon the perception of respondents who participated in the evaluation at various levels, the CHWs have had greatest impact on health promotion activities. The CHP has substantially contributed to improve the health status of women, new-born and children in Rwanda particularly in reducing child malnutrition, increased availability and usage of family planning services and care of pregnant women. Increased access to bed net; improved household hygiene practices; increased facility births and reduced child malnutrition were significant changes since the introduction of the CHP.

The CHP is more relevant for remote, rural areas particularly in hard to reach areas where there were shortages of health workers. Communities tend to accept CHWs depending on their behaviour, attitude and services provided to their community. Some educated, well-off and people with health insurances did not see the benefit of the CHWs. CHWs felt that they belonged to their community while community less involved in recruitment and selection of CHWs.

The main facilitators to achieving the objectives of the CHP appear to be the coordination of CHW activities at different levels of the health system as CHWs enjoy good linkage with local health structures. Barriers to achieving the CHP objectives included lack of efficient supply mechanisms for CHWs, need for better developed supervision structure for CHWs, training often not timely nor relevant to needs and education level required of CHWs to perform the assigned tasks.

There are two key aspects regarding the efficiency of the CHP. The first relates to the problems with timely supplies replenishment due to shortage of supplies and communication gap between the health centres and the CHWs; and suggestion to reconfigure the CHP to focus on preventive services.

There was strong political will to support the sustainability of the CHP even though there were challenges to sustain the programme financially. For financial sustainability, in addition to reviving and strengthening the capacities of the cooperatives, financial accountability measures must be in place to prevent embezzlement of the funds. The CHP should start consider alternative income generation activities in addition to cooperatives. Without regular training and supportive supervision, institutional sustainability of the CHP cannot be maintained. However, CHWs had social obligations to serve their community. Thus, shared responsibilities from the community and the government to sustain the CHP after withdrawal of the external assistance.

6 ANNEXES

Annex 1. Topic guide for key informant interviews

Annex 2. Topic guide for CHWs and community groups

| SECONDARY DATA | | | |
|-----------------------|--|------------------------------|----------------------------|
| | | Author and Journal | Year of publication |
| I | Policies and strategies | | |
| I.I | Overarching policy documents | | |
| 1 | Vision 2020 | Government of Rwanda | 2000 |
| 2 | Economic Development and Poverty Reduction Strategy II (EDPRS II 2013-2018) | Government of Rwanda | 2013 |
| 3 | Seven-Year Government Program (2010-2017) | Government of Rwanda | 2010 |
| I.II | Health sector | | |
| | General | | |
| 4 | Health Sector Policy 2014 | Ministry of Health | 2014 |
| 5 | Health Sector Strategic Plan III 2012-2018 | Ministry of Health | 2012 |
| 6 | Health Sector M&E plan (HSSP III 2014-2018) | Ministry of Health | 2014 |
| 7 | Essential Package of Service delivery per level | Ministry of Health | 2012 |
| 8 | Human Resources Policy 2014 | Ministry of Health | 2014 |
| 9 | HRH strategic plan 2011-2016 | Ministry of Health | 2011 |
| 10 | Health Financing Sustainability Policy 2015 | Ministry of Health | 2015 |
| 11 | Health Sector Research Policy 2012 | Ministry of Health | 2012 |
| 12 | National Health Research Agenda 2014-2018 | Ministry of Health | 2014 |
| 13 | The District Health System Re-organisation Guideline from a Managerial Perspective | Ministry of Health | 2011 |
| | Reproductive, Maternal, Neonatal, Child and Adolescent Health and Nutrition | | |
| 14 | Rwanda road map to accelerate the reduction of maternal and neonatal mortality and morbidity (2013-2018) | Ministry of Health | 2013 |
| 15 | Maternal, Newborn and Child Health National Strategy (2013-2018) | Ministry of Health | 2013 |
| 16 | National Food and Nutrition Policy | Government of Rwanda | 2014 |
| 17 | National Food and Nutrition Strategic Plan (2013-2018) | Government of Rwanda | 2013 |
| 18 | Family Planning Policy | Ministry of Health | 2012 |
| 19 | Family Planning strategic plan (2012-2016) | Ministry of Health | 2012 |
| 20 | ASRH and Rights Policy (2011-2015) | Ministry of Health | 2012 |
| 21 | National ASRH and Rights Strategic Plan | Ministry of Health | 2012 |
| | Community Health | | |
| 22 | Community Health Policy | Ministry of Health | 2015 |
| 23 | Community Health strategic plan (2013-2018) | Ministry of Health | 2013 |
| 24 | National strategy for community development and local economic development (2013-2015) | Ministry of Local Government | 2013 |
| 24 | Rwanda Community-Health Based Insurance Policy | Government of Rwanda | 2010 |

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| 25 | Community Performance-Based Financing User Guide | Ministry of Health | 2009 |
| | HIV/AIDS, Malaria, Tuberculosis | | |
| 26 | Rwanda HIV and AIDS National Strategic Plan (2013-2018) | Ministry of Health | 2013 |
| 27 | City of Kigali, strategic plan for HIV and AIDS response in the city of Kigali (2013-2016) | Ministry of Health | 2013 |
| 28 | Malaria strategic plan (2013-2017) | Ministry of Health | 2014 |
| 29 | National Strategic Plan TB (2013-2018) | Ministry of Health | 2014 |
| 30 | Vaccine and preventable diseases strategic plan (2013-2017) | Ministry of Health | 2013 |
| | Environmental Health | | |
| 31 | Environmental health Policy | Ministry of Health | 2008 |
| | Mental Health | | |
| 32 | National Mental Health Policy | Ministry of Health | 2010 |
| 33 | Strategic Plan for the National Mental Health Policy | Ministry of Health | 2011 |
| | Palliative Care | | |
| 34 | Home Based Care Practitioner Program (HBCPP) - Concept | Ministry of Health | 2015 |
| I.III | Other sectors | | |
| 35 | National Urbanization Policy | Ministry of Health | 2015 |
| 36 | National Policy and Strategy for Water Supply and Sanitation services | Ministry of Infrastructure | 2010 |
| II | Surveys, evaluations, assessments and reviews | | |
| | Census | | |
| 37 | Population and Housing Census 2012: Report on the Provisional Results. Republic of Rwanda | Government of Rwanda | 2012 |
| | National surveys and evaluations | | |
| 38 | DHS (2005, 2007/2008, 2010, 2014/2015) | National Institute of Statistics of Rwanda, Ministry of Health, ICF International | multiple |
| 39 | Integrated Household Living Condition, (every 2 years: 2010, 2012, 2014) | African Development Fund | multiple |
| 40 | Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey | WFP | 2012 |
| 41 | Rwanda's report on: - Implementation of the SDGs - Contribution to the formulation of the SDGs - Plan for domestication of the SDGs | Government of Rwanda | 2015 |
| 42 | Millennium Development Goals Rwanda: Final progress Report 2013 | Ministry of Finance and Economic planning | 2014 |
| | HSSP II & III reviews | | |
| 43 | Mid Term Review (MTR) of the Rwanda Third Health Strategic Plan (2012-2018) | Ministry of Health | 2015 |
| 44 | Joint Assessment of Rwanda's Third Health Sector Strategic Plan (HSSP III) | International Health partnership | 2012 |

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| 45 | Mid Term Review (MTR) of The Rwanda Second Health Strategic Plan (2009 – 2012) | International Health Partnership | 2011 |
| | Community Health - Comprehensive | | |
| 46 | Consolidated report on CHW-AIM assessment in Rwanda (unpublished) | Ministry of Health /CHU | 2013 |
| 47 | Community Health Situation Analysis and Main Gaps | Ministry of Health | 2012 |
| | Community Supply Chain | | |
| 48 | Community Health Supply Chain Baseline Assessment Report | Ministry of Health, JSI, NUR, SC4CCM | 2011 |
| | Community Health Information System | | |
| 49 | Evaluating the Impact of RapidSMS: Draft report | NUR-SPH/ UNICEF/Ministry of Health | Ongoing |
| | CHWs' cooperatives | | |
| 50 | A Comprehensive Assessment of Community Health Workers' cooperatives in Rwanda: draft report | CPRCD / MSH / Ministry of Health | Ongoing |
| | Community Performance-Based Financing | | |
| 51 | Rwanda Community Performance-Based Financing Impact Evaluation: final report | Shapira, G. and Khalisa, I. | 2016 |
| 52 | The Experience of Rwanda with Exploiting, Extending, and Sustaining the Performance-based Financing for Better Health Outcomes (2005-2015) (research report) | Humuza, J., et al. | 2014 |
| 53 | Verification of Performance in Results-Based Financing (RBF): The Case of Community and Demand-Side RBF in Rwanda (discussion paper) | Renaud, A., et al. (World Bank) | 2014 |
| 54 | Community performance-based financing to improve maternal health outcomes: Experiences from Rwanda | WHO | 2013 |
| 55 | Assessment of Community Health Workers incentives on maternal and newborn health service performance in Rwinkwavu district hospital, Kayonza district, Rwanda | Ndangurura, D. (Master's thesis) | 2015 |
| | Maternal and Neonatal Health (MNCH) | | |
| 56 | Success Factors for Women's and Children's Health: Background Review of Data and Literature on 10 Fast-Track Countries' Progress Towards MDGs 4 and 5. 2013 (chapter 11: Rwanda) | WHO, WHO/The partnership for MNCH, WB, Alliance for Health Policy and System Research | 2014 |
| 57 | Evaluation of Maternal and Newborn Community Health Workers in Rwanda, December 2012 to March 2013 (unpublished) | Marina Plesons (Dartmouth College/Ministry of Health - CHU) | 2013 |
| 58 | Summary of Rwanda country experience – implementing PNC home visits | Save the Children, MCHIP | 2014 |
| 59 | Trends in Neonatal Mortality in Rwanda, 2000-2010. DHS Further Analysis Reports No. 88. | Winter, R., et al. | 2013 |
| | Early Childhood Development | | |
| 60 | Knowledge, Attitudes and Practices Assessment on Early Nurturing of Children Report Ministry of Health, Rwanda and UNICEF Rwanda | UNICEF | 2014 |
| 61 | Early Childhood Development and Family Services: Baseline Evaluation in 20 Sites in Rwanda | UNICEF/UMbuto Foundation/ | 2014 |

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| | | PIH | |
| | ICCM | | |
| 62 | Costing of Integrated Community Case Management Analysis Report Rwanda | MSH | 2013 |
| 63 | Report of The Rapid Evaluation of the National Community Integrated Management of Childhood Illnesses (C-IMCI) Program | Ministry of Health | 2010 |
| | Nutrition / Community Based Nutrition Programme | | |
| 64 | Joint supervision of District plans for elimination of malnutrition | Ministry of Health | 2012 |
| 65 | Evaluation of District plans for elimination of malnutrition | Ministry of Health | 2014 |
| | Community base provision of family planning (CBPFP) | | |
| 66 | Community-Based Distribution of Injectable Contraceptives in Rwanda: An Intervention to Reverse Rural Disadvantage, September 2010, USAID | USAID | 2010 |
| 67 | Introducing Community-Based Provision of Family Planning Services in Rwanda: A Process Evaluation of the First Six Months of Implementation (2010-2011) | Ministry of Health /FHI | 2011 |
| 68 | Facility and Community Assessment for Reproductive Health and Family Planning Commodities and Services in Rwanda, Final report | UNFPA | 2014 |
| 69 | Community-Based Provision of Family Planning assessment | NUR-SPH/UNFPA | Ongoing |
| | Malaria, HIV / AIDS, TB | | |
| 70 | Improved Retention Associated with Community-Based Accompaniment for Antiretroviral Therapy Delivery in Rural Rwanda | Ministry of Health | 2012 |
| 71 | Evaluation De L'implication Des Communautés Dans La Lutte Contre La Tuberculose Au Rwanda | Ministry of Health / WHO | 2010 |
| 72 | TB Prevalence survey | Ministry of Health | 2012 |
| | III. Scientific Papers | | |
| | Rwanda Health System | | |
| 73 | Drivers of improved health sector performance in Rwanda: a qualitative view from within. | Sayinzoga, F., et al. in <i>BMC Health services Research</i> | 2016 |
| 74 | Achieving a "Grand Convergence" in Global Health by 2035: Rwanda Shows the Way Comment on "Improving the World's Health Through the Post-2015 Development Agenda: Perspectives From Rwanda" | Yamey G, et al. in <i>IJHPM</i> | 2015 |
| 75 | Rwanda 20 years on: investigating in life | Binagwaho, A., et al. in <i>The Lancet</i> | 2014 |
| 76 | Impact of health systems strengthening on coverage of maternal health services in Rwanda, 2000–2010: a systematic review | Bucagu, M., et al. in <i>Reproductive health matters</i> | 2012 |
| 77 | Innovations in Rwanda's health system: looking to the future | Logie D., et al. in <i>The Lancet</i> | 2008 |
| | Community Health Programme - Comprehensive | | |
| 78 | Rwanda's evolving community health worker system: a qualitative assessment of client and provider perspectives. | Condo, J. et al. in <i>Human Resources for Health</i> | 2014 |
| 79 | CHW Peer Support Groups: An Alternative Approach to Supportive Supervision. Lessons from the Rwanda Kabehe Mwana Child Survival Project. USAID presentation at the Integrated Community Case Management (iCCM): Evidence Review Symposium. 3-5 March 2014, Accra, Ghana. | Weiss, J., et al. | 2014 |

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| 80 | The Costing report of Rwanda's Community Health Workers Integrated Services: draft report | Kamugundu, D., et al. (Ingenuity/MSH) | Ongoing |
| | Community Based Health-Insurance | | |
| 81 | Universal health coverage in Rwanda: dream or reality | Nyandekwe, M., et al. in <i>Pan Afr Med J</i> | 2014 |
| 82 | Towards Universal Health Coverage: An Evaluation of Rwanda Mutuelles in Its First Eight Years | Lu C, et al. in <i>PLoS ONE</i> | 2012 |
| | Community Health Information System | | |
| 83 | Assessing the fit of RapidSMS for maternal and new-born health: perspectives of community health workers in rural Rwanda | Mwendwa, P., et al. in <i>Development in Practice</i> | 2015 |
| 84 | Data for Program Management: An Accuracy Assessment of Data Collected in Household Registers by Community Health Workers in Southern Kayonza, Rwanda | Mitsunaga, T., et al. in <i>Journal of Community Health</i> | 2014 |
| 85 | Utilizing community health worker data for program management and evaluation: Systems for data quality assessments and baseline results from Rwanda | Mitsunaga, T., et al. in <i>Social Sciences and Medicine</i> | 2013 |
| 86 | Designing and Implementing an Innovative SMS-based alert system (RapidSMS-MCH) to monitor pregnancy and reduce maternal and child deaths in Rwanda | Ngabo, F., et al. in <i>Pan Afr Med J</i> | 2012 |
| | Community Supply chain | | |
| 87 | Quality Improvement Teams and Incentives for Improving ICCM Supply Chains in Rwanda Ministry of Health, Rwanda. Presentation at the Integrated Community Case Management (iCCM): Evidence Review Symposium. 3-5 March 2014, Accra, Ghana. | P. Njanji on behalf of C. Mugeni (MoH) | 2014 |
| 88 | Making products available among community health workers: Evidence for improving community health supply chains from Ethiopia, Malawi, and Rwanda | Chandani, Y., et al. in <i>Journal of Global health</i> | 2014 |
| 89 | Factors Affecting Availability of Essential Medicines among Community Health Workers in Ethiopia, Malawi, and Rwanda: Solving the Last Mile Puzzle | Chandani, Y., et al. in <i>Am J Trop Med Hyg.</i> | 2012 |
| | Community Performance Based Financing | | |
| 90 | The effect of performance-based financing on illness, care-seeking and treatment among children: an impact evaluation in Rwanda | Skiles, M., et al. in <i>BMC Health Services Research</i> | 2015 |
| 91 | Performance-based financing and changing the district health system: experience from Rwanda | Soeters, R., et al. in <i>Bulletin of WHO</i> | 2006 |
| | Maternal and Neonatal Health (MNCH) | | |
| 92 | Increasing Access to Prevention of Postpartum Hemorrhage Interventions for Births in Health Facilities and at Home in Four Districts of Rwanda | Dao, B., et al. in <i>African Journal of Reproductive Health</i> | 2015 |
| 93 | Decentralizing Maternity Services to Increase Skilled Attendance at Birth and Antenatal Care Utilization in Rural Rwanda: A Prospective Cohort Study | Nathan, L., et al. in <i>Maternal and Child Health Journal</i> | 2015 |
| 94 | Experiences engaging community health workers to provide maternal and newborn health services: Implementation of four programs | Haver, J., et al. in <i>Int J Gynaecol Obstet.</i> | 2015 |
| 95 | Assessing predictors of delayed antenatal care visits in Rwanda: a secondary analysis of Rwanda demographic and health survey 2010 | Ntaganira, J., et al. in <i>BMC Pregnancy and Childbirth</i> | 2014 |
| 96 | Barriers and solutions for timely initiation of antenatal care in Kigali, Rwanda: Health facility professionals' perspective | J Hagey, J., et al. in <i>Midwifery</i> | 2014 |

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| 97 | Maternal death audit in Rwanda 2009–2013: a nationwide facility-based retrospective cohort study | Sayinzoga, F., et al. in <i>BMC Open</i> | 2014 |
| Integrated Community Case Management of childhood illness | | | |
| 98 | A causal loop analysis of the sustainability of integrated community case management in Rwanda | Sarriot, E., et al. in <i>Social Science and Medicine</i> | 2015 |
| 99 | Nationwide implementation of integrated community case management of childhood illness in Rwanda | Mugeni, C., et al. in <i>Global health, science and practice</i> | 2014 |
| 100 | Effect of shortened Integrated Management of Childhood Illness training on classification and treatment of under-five children seeking care in Rwanda. | Ntaganira, J., et al. in <i>Risk Management and Healthcare Policy</i> | 2014 |
| 101 | Plausible role for CHW peer support groups in increasing care-seeking in an integrated community case management project in Rwanda: a mixed methods evaluation | Langston, A., et al. in <i>Global health, science and practice</i> | 2014 |
| 102 | Impact of Home-Based Management of malaria combined with other community-based interventions: what do we learn from Rwanda | Nzayirambaho, M., et al. in <i>Pan Afr Med J</i> | 2013 |
| 103 | Home-based management of fever in Rwanda: drug distributor knowledge, attitudes and practices | Nzayirambaho, M., et al. in <i>Rwanda Medical Journal</i> | 2010 |
| 104 | La prise en charge à domicile de la fièvre chez les enfants de moins de cinq ans améliore le recours aux soins recommandés au Rwanda | Nzayirambaho, M., et al. in <i>Rwanda Medical Journal</i> | 2010 |
| Nutrition/CBNP | | | |
| 105 | Reliability of anthropometric measurements performed by Community Nutrition Workers in a community-based Pediatric growth monitoring Program in rural Rwanda. | Ngirabega, D., et al. in <i>Revue d'épidémiologie et de santé publique</i> | 2010 |
| 106 | Impact of implementing performance-based financing on childhood malnutrition in Rwanda | Binahwaho, A., et al. in <i>BMC Public Health</i> | 2014 |
| Community Based Provision of Family Planning (CBPFP) | | | |
| 107 | Balancing workload, motivation and job satisfaction in Rwanda: assessing the effect of adding family planning service provision to community health worker duties | Chin-Quee, D., et al. in <i>Reproductive Health</i> | 2015 |
| 108 | Motivations and Constraints to Family Planning: A Qualitative Study in Rwanda's Southern Kayonza District | Farmer, D. B., et al. in <i>Global Health: Science and Practice</i> | 2015 |
| Malaria, HIV/AIDS, TB | | | |
| 109 | Community-Based Accompaniment Mitigates Predictors of Negative Outcomes for Adults on Antiretroviral Therapy in Rural Rwanda | Gupta, N., et al. in <i>AIDS and behavior</i> | 2015 |
| 110 | Efficiency of HIV/AIDS Health Centers and Effect of Community-Based Health Insurance and Performance-Based Financing on HIV/AIDS Service Delivery in Rwanda | Zeng, W., et al. in <i>Am J Trop Med Hyg.</i> | 2014 |
| 111 | Reduced pediatric hospitalizations for malaria and febrile illness patterns following implementation of community-based malaria control program in rural Rwanda | Sievers, A., et al. in <i>Malaria Journal</i> | 2008 |