Evaluation of NPA's support to Mutuelle, a voluntary health insurance scheme in Rwanda

Magnus Hatlebakk and Øystein Evjen Olsen

R 2005:2

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Price: NOK 90

ISSN 0805-505X
ISBN 82-8062-108-3
This report is also available at:
www.cmi.no/publications

Indexing terms
Health insurance
Incentives
Rwanda

Project number
24057

Project title
Evaluation of NPA Health Programme - Rwanda

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Preface[1]

After an initial contact with Øystein Evjen Olsen, NPA contacted research director Jan Erik Askildsen at the Programme for Health Economics in Bergen (HEB) regarding this evaluation. Askildsen suggested a collaboration between Magnus Hatlebakk and Øystein Evjen Olsen, which has turned out very fruitful. Øystein Evjen Olsen has been responsible for the health service evaluation, with the main part being chapter 3, while Magnus Hatlebakk has been responsible for the health financing part of the evaluation, with the main part being chapter 4. Hatlebakk conducted the fieldwork, after consultations with Evjen Olsen, who has previously evaluated the NPA health program in Rwanda. Magnus Hatlebakk is an economist who has focused on local financial markets in developing countries, while Øystein Evjen Olsen is a medical doctor, with an additional degree in health economics, and special interest in health policy, planning and financing in developing countries. Evjen Olsen is presently engaged by the Ministry of Health in Tanzania. As Hatlebakk moved to Chr. Michelsen Institute (CMI) in September 2004, the evaluation has been commissioned to CMI. This report is a slightly revised version of the original report to NPA, where we have removed some of the most detailed advices, and made a few stylistic changes.

February, 2005

Magnus Hatlebakk Øystein Evjen Olsen

[1] Commissioned by Norwegian People's Aid (NPA) with funds from NORAD.

Acknowledgements

We would like to thank in particular project manager Aynalem T. Georgis at the NPA office in Gisenyi, who organized the fieldwork and provided us with all the information we needed. We also received valuable help from the District Medical Officer for Gisenyi district, Dr. Innocent Bayege. We are also grateful to all the people we met in Kabaya and Muhororo health districts, as well as the health centre chiefs, the presidents of the Mutuelles and other staff in Gisenyi health district. In Kigali we benefited greatly from discussions with NPA country representative Dagmar Førland, Julius Mihigo from USAID, Hertilan Inyarubuga from the Ministry of Health and Damascéne Butera from PRIME II. We also thank the NPA office in Dar es Salaam for valuable practical assistance. Finally, we thank Jan Erik Askildsen for a useful discussion during the report writing phase.

Executive Summary

Background

Norwegian People's Aid (NPA) has supported health services in Rwanda since 1994, first during the emergency period, and later with direct support to the restoration of the health institutions after the emergency. Later the support has gradually shifted to promotional and preventive health care, and most recently to technical support to Mutuelle, a community based health insurance scheme. This evaluation is based on the Terms of References provided by NPA, and has focused on evaluating the most recent policy. The evaluation provides a number of recommendations, which may contribute to the financial sustainability of the insurance scheme. It also provides recommendations on the health services supported, both in terms of general recommendations as well as specific recommendations related to the Mutuelle.

After the genocide, international donors provided free health services to Rwanda. However, as the donors pulled out of emergency aid, the government decided to introduce user-fees in 1996, which led to a decrease in the demand for health services. This in turn led to the introduction of Mutuelle in 1999. Mutuelle is first of all a risk-sharing mechanism, where people pay a premium for the right to treatment at the local health centre and the district hospital. We shall expect these prepayments to be larger than the actual payments in case of no insurance, since risk-averse people are willing to pay extra to avoid the high costs of treatment in case of illness. So, we shall expect a certain increase in the income of the health facilities.

The main problem with these community based insurance schemes is that many go into a deficit. We suggest a number of reforms of the fee- and payment system that may improve the chance of financial sustainability. In addition, high quality health services are necessary to achieve a high membership rate in the Mutuelles. A high membership rate is in turn necessary for financial sustainability, since otherwise only the most costly patients will be members.

NPA's capacity to link and support a national health strategy

The Government of Rwanda has three main elements of their national health strategy, to reduce the burden of disease, to improve access to health services, and to improve the quality of services. Furthermore, Mutuelle has been a major instrument for the government in improving the access to the health services. NPA has clearly supported the national strategy by being highly involved in all three parts of the government's strategy, as well as in supporting the Mutuelle.

Advise and actions on the health services

An evaluation of the health services was conducted using existing information and indicators as well as external indicators introduced by the evaluators. The external

evaluation found generally acceptable quality of infrastructure such as buildings and equipment. There are however concerns about the quality of actual services delivered, as well as the range of services provided given the expected burden of disease profile in the area. There are also concerns about the availability of qualified human resources. The evaluation using the NPA indicators revealed a discrepancy between the types of indicators mentioned in planning documents and those reported. The health services component is encouraged to review its set of indicators to determine feasible input, process and output indicators with corresponding information on type of information needed and frequency of reporting. Use of existing Health Management Information Systems, despite its flaws, is encouraged. Need, demand and outcome indicators can also be used, but requires information not available at present, and thus subject to larger, often household, studies. The evaluation further concludes that increased enrolment to the Mutuelle hinges on increased and sustained quality and availability of qualified human resources, whether it is provided by the NPA support or by other mechanisms after NPA withdrawal.

Advice and actions on Mutuelle

The NPA supported Mutuelles should comply with the fee- and payment structures of the most successful Mutuelles in Rwanda, which has been supported by PRIME II. We recommend that the prepayments must be transferred automatically to the health centre and district hospital (the capitation system). This will ensure financial sustainability for the Mutuelles. In addition, small co-payments must be applied, to avoid excessive use of the health services. The present co-payment of 50% at Gisenyi hospital is not in compliance with PRIME II. We still believe that the high co-payment is necessary, due to the costs of hospital treatment. However, we suggest introducing a second voluntary contract, where the prepayment is higher, and the 50% co-payment is replaced by a smaller fee. Furthermore, the prepayments must be collected before a fixed date, preferably right after the main harvest. A fixed date is to ensure that people do not wait till they get ill. We also suggest that NPA, or other agencies, pay the prepayment for the very poor. To ensure community participation in quality control and selection of the poor households, we suggest monthly member meetings. The reforms of the Mutuelles must also take place in Gihundwe district.

Phasing out

NPA should be active in Gisenyi until we know whether the Mutuelles become sustainable. We suggest that the reforms are implemented before people pay for the second year. Then NPA must not only wait to see whether people renew their membership a second time, but also a third time. When people are willing to pay for a third time we are confident that the Mutuelle has become sustainable. The second prepayment will take place in 2005, and the third prepayment will take place in 2006. We recommend that NPA continue supervision during the third year, and thus pulls completely out during 2007. During the phase out period, NPA must not only give technical support to Mutuelle, but also continue supervising the health centres together with the health district to ensure that the high quality health care is achieved and maintained. To support the interaction with the health district we suggest that the office is scaled down and re-located to the administrative buildings of the health district, and we. When it comes to direct financial support, NPA must wait till the capitation system is in place. At that time NPA may support the prepayments for the very poor in Gisenyi,

and NPA may pay the debt for the Mutuelles in Gihundwe. Finally, the evaluation encourages NPA to support health insurance schemes also because of their community based, civil society capacity building, and service delivery potential. It should only be pursued however if adequate quality of both the services provided and the Mutuelle can be secured.

1. Introduction and evaluation background

The recent history of Rwanda is one of tragedy and despair and well known. The country has faced immense development challenges after the genocide in 1994. These include the challenges of providing adequate social services such as health services to the population given the prevailing circumstances. The Norwegian Peoples Aid (NPA) has been active in the health sector in Rwanda during the past decade. The policies have shifted from service delivery and facility rehabilitation to promotion and preventive services and recently policies enabling the health services to sustain adequate resources through risk sharing schemes. It has worked closely with the ministry of health in Rwanda (MINISANTE) and other key developmental actors as well as the community within which it has been active.

The aim of the NPA in Rwanda is to pull out of health services delivery and health financing mechanisms. It has been important to complete this process in a manner that facilitates a smooth and sustainable transition. To assist this process the NPA therefore commissioned an external consultancy group with the following terms of reference:

The overall objective of the evaluation is to examine the existing Health Programme, and to determine its relevance, strengths and weaknesses in its support to the GoR establishment of Mutuelle. The evaluation will also focus on recommendations on future courses of action.

In particular the evaluation will focus on:

1. *Analysis of NPA's capacity to link and support a national health strategy or specific aspects of it;*
2. *Analysis and advice on the implementation of the Mutuelle Programme in the districts supported by NPA;*
3. *Advise on the course of action with respect to the sustainability of the Mutuelle to be taken during the phase out period and on the length of the phase out period;*
4. *Advice on priorities for health budget allocations during the phase out period.*

The scope of this evaluation will be descriptive with a developmental and managerial focus. Given the time and resource constraints it is not possible to conduct an experimental evaluation to try to discover evidence of causes or effects. The evaluation will focus on developmental issues providing input to the NPA policies and practices to better enable them to fulfil their main objectives and organizational interventions. It will also give managerial input to the performance and accountability of the interventions and services, and finally provide a rough economic assessment of the resources used towards the main aims. It has not been possible to provide a comprehensive evaluation of the NPA health programme. The evaluation has focused on the NPA interventions aimed at providing sustainable resources to the existing health programme – the health insurance scheme (Mutuelle). Nevertheless it does also include some comments and recommendations on other parts of the NPA health programme. It will largely depend on indicators provided through the NPA programmes, but will also introduce external indicators and assessments. It is based on both quantitative and qualitative inputs during the evaluation phase.

Chapter 2 gives an introduction to the health services in Rwanda. Above we have listed the four main issues mentioned in the ToR. Chapter 3 covers the first issue, that is, whether NPA has been able to link and support the national health strategy. Chapter 4 covers the second issue and to some extent the third issue, that is, the chapter discusses the present implementation of the Mutuelle, and gives advice on adjustments of the fee- and payment systems that seems necessary for financial sustainability of the insurance scheme. Chapter 5 covers the phase-out period, and thus parts of the third issue, as well as the fourth issue mentioned in the ToR. Chapter 6 lists the recommendations, which are based on chapters 3-5.

2. Description of health services in Rwanda

Rwanda is divided into 11 health regions and further into 40 health districts. A district is divided into several communes, and each commune has approximately eight sectors, each containing about seven cells. A cell comprises about 100 households. In 1998, Rwanda had three public referral hospitals, including one university hospital in Butare, the Central Hospital in Kigali and one mental health care hospital. Overall 30 district hospitals (18 public and 12 mission hospitals) were operational. District hospitals cover on average a catchment area of 217,000 inhabitants. District hospitals report on average 180 beds and are staffed with 46 qualified persons and equipped to provide secondary health care. Hospitals' occupancy rate strongly depends on their ownership, with 48 percent in public and more than 100 percent in mission hospitals (due to children sharing beds). Hospital patients' average length of stay is seven days. There are about 340 health centres in Rwanda, each covering an average catchment area of 23,000 people, which corresponds to the average population size of a commune. Health centres provide primary care mainly in rural areas, and are generally staffed by one or two nurses supported by medical assistants. Among the staff there are on average about three government employees, and the rest are non-governmental employees who are paid out of health centre revenue. Rwanda's private health sector is still small consisting of one tertiary care hospital in Kigali. As of 1998, there were 14 private physician practices or clinics that were located mainly in Kigali. Although the MoH encourages the population to seek care in health centres, it is estimated that an important portion of the rural population seeks care with traditional healers before or instead of going to a health centre. Traditional healers allow patients to pay in kind, responding to the irregular cash availability in rural households. The Centre for the Purchase of Essential Drugs for Rwanda (Centrale d'Achat des Médicaments Essentials au Rwanda, CAMERWA) is the national drug importer and sells essential drugs to health facilities in Rwanda's public and mission health sector. CAMERWA started its activities in 1998 with the support of the World Bank Health and Population Project. There are several private pharmacies in Rwanda, among them five main importers. Overall, Rwanda's public and private sector imported drugs valued at $22.4 million. Of this amount, 45 percent was imported by international organizations for distribution in the public sector, 32 percent by the private sector, and 23 percent by CAMERWA/World Bank. An unknown part of private sector imports was sold to international organizations in the country for distribution in the public sector (Republic of Rwanda, 1999). As in other low-income economies, Rwanda faces constraints in finding qualified personnel to cope with an expanding health sector and a growing population. This situation of limited resources is challenging the efficient use of the qualified staff available to improve the quality and effectiveness of care. The 1998 annual report of the MOH counted 123 physicians and 1,566 qualified personnel working in Rwanda's health districts, see Schneider et al. (2001).

3. NPA and the government health policy

The main aim of the health policy of the Rwanda Government is based on three main strategies. The first is to reduce the burden of disease, with primary focus on diseases such as HIV/AIDS, Malaria and childhood diseases. The second is to improve access to health services, partly through improved redemption policies to the poor and vulnerable groups, while the third strategy is to improve quality of services, see the Government of Rwanda (2002) PRSP for a description of these priorities. The National Policy for 2000, which is referred in Schneider et al. (2000), lists the prioritized health challenges and they include Malaria, HIV/AIDS, Tuberculosis, Nutrition, Reproductive Health, Infant Diseases, Public Hygiene and improved access to primary care. There is a strong emphasis on preventive services complemented by basic curative techniques. There is an emphasis on training health workers at community level (animateurs). Nevertheless access to qualified human resources is one of the greatest challenges to providing adequate quality and quantity of services.

3.1 The health care financing mechanisms

Rwanda introduced user fees as early as in 1975, according to Schneider et al. (2000). Rwanda followed the recommendations of the Bamako Initiative in 1989 implementing an essential drugs cost recovery scheme. Free health services have only been available in the immediate post conflict period (1994-1995). User fees were again introduced in 1996. The Schneider et al. evaluation, which was conducted for the USAID, showed that the user fees, coupled with increasing poverty in the population, led to decreasing utilization of the health services. This led to the introduction of varying risk sharing and community financing schemes in a few districts and around specific facilities (such as the mission health centres in Kisagara and Musaka). From 1999 the government introduced an insurance scheme for government employees. The government introduced the Mutuelle health insurance program in three districts (Byumba, Kabgayi and Kabutare) with the support of the USAID.

3.2 NPA role in health financing and services

The NPA support to the Gisenyi District health services started in 1997, see NPA, Rwanda (2003). The support initially focused on the need for providing services and rehabilitating health infrastructure. In line with the shift in NPA global policy, the support to the supply of services was downsized and eventually terminated during a period of 3 years from 2000 to 2003. A shift towards introducing sustainable financing mechanisms to support health service delivery was introduced, first in Gisenyi District (in 2000) and later in Gihundwe district (in 2001). The scheme has been introduced to four health centres in three administrative areas in Gihundwe and in six administrative areas in Gisenyi. The objectives of the NPA health programme are now aimed at

A. A health insurance system (Mutuelle) in the district to improve population access to health care
B. Promotional and Preventive health activities as defined in the MINISANTE package of activities.

The immediate objectives and their indicators (as presented by NPA documents, see NPA, Rwanda (2004)) can be summarized in the following table:

Table 1: Main objectives and indicators of the NPA health programme

Main objective	Description	Indicator
A	Strengthen and support Community Health Insurance Systems (CHI) Mutuelle	1. Number of CHI's initiated and functional 2. Percentage of the total population of the health district who are members of the CHI
B	Strengthen health promotion and preventive activities	3. Percentage of individuals incorporated within different health Mutuelle associations 4. Number of individuals using health services after preventive health training
C	Strengthening health services delivered	5. Utilization rate 6. Coverage rate 7. Mortality rate
D	Lower prevalence of Malaria and improve case anagement	8. Incidence 9. Prevalence 10. Mortality 11. Morbidity
E	Community Based Nutrition Programme	12. Malnutrition rate of children under 5 13. Community participation rate to the PNBC activities 14. Violence rate against women 15. Child abuse rate 16. Basic rights evaluation
F	HIV/AIDS programme	17. HIV infection prevalence 18. PLWHA ratio benefiting from income generating projects 19. Youth associations contacted and working on the fight against AIDS and rights of youth
H	Accessibility of primary health care	20. Percentage of the entire population served by the health district with less than 30 minutes walking distance to health care
I	Management programme	21. Number of supervisions made on expected supervisory programmes 22. Number of meetings held by members of the health committees at the level of Health Centres

3.3 Do the aims cater for the needs and demand? Assessment of the health programme

This assessment concludes that the overall aim of the NPA to strengthen the function and effectiveness of the Mutuelle is well in line with both international and Government of Rwanda national policies. It is evident that risk-sharing schemes have the theoretical potential of providing new and sustainable resources to the health sector. As will be discussed later there are important precautions to be aware of, as well as context specific challenges to its success. The evaluation reveals however that NPA collaborates well with the government and other agencies concerned with these risk sharing schemes.

The specific performance assessment of the health programme of NPA has focused on four main aspects:

1. Assessment of NPA indicators as shown in table 1
2. Assessment of facility workload and quality indicators as defined by the evaluators
3. Assessment of displacement effects and quality improvement effects of the programme, Mutuelle in particular
4. Performance of the Mutuelle concept

Table 2. Indicators, numbers and information sources as provided by NPA in Gisenyi

Indicator	Number	Information source
1. Number of CHI's initiated and functional	6	
2. Percentage of the total population of the health district who are members of the CHI	33.42%	From the report of Mutuelle offices
3. Percentage of individuals incorporated within different health Mutuelle associations		Mutuelle report
4. Number of individuals using health services after preventive health training and after Mutuelle started	10,032 in 6 months	Health district report 2004
5. Utilization rate	4.9%	Total number of pts consulted x100 over the total population in the district. Information from the regional department of health
6. Coverage rate	62.3%	This includes private health services but, not all private ex Beer factory , Information from the regional department of health
7. Mortality rate	1.5%	0.2% Health centre 2.8% Hospital .Death in Health centre + Death in Hospital. Information same source
8. Incidence	8874	
9. Prevalence	Missing	
10 Mortality	1.32%	Number of cases who died of Malaria x100 over number of total pts who died Information same source
11. Morbidity	43%	Number of Malaria cases seen x100 over total consultation information same source
12. Malnutrition rate of children under 5	0.34%	Number of Malnourished children under Five x 100 over total children - information same source Total number of children under Five are 87466,out of these 296 are malnourished, Total number of Pts with malnutrition including adults is 447
13. Community participation rate to the PNBC activities	Very Low	Information from Monthly supervision of the Health services
14. Violence rate against women	Missing	
15. Child abuse rate	Missing	
16. Basic rights evaluation	Missing	
17. HIV infection prevalence in Gisenyi health district	14%	Survey in 2003 Information from the health district office
18. PLWHA ratio benefiting from income generating projects(Total number of PLWHAS in Gisenyi not known but total Number of PLWHAS supported by NPA 426 members in six Associations		
19. Youth associations contacted and working on the fight against AIDS and rights of youth	2 associations and Anti AIDS clubs in 9 schools	
20. Percentage of the entire population served by the health district with less than 30 minutes walking distance to health care	14.5%	Total number of pts who visited the health service from the catchment area But not all of them within 30 minutes walking distance. Not achieved yet
21. Number of supervisions made on expected supervisory programmes	2 supervision per Health centre /m	
22. Number of meetings held by members of the health committees at the level of Health Centres	One meeting /month /health centre	

3.4 NPA indicators

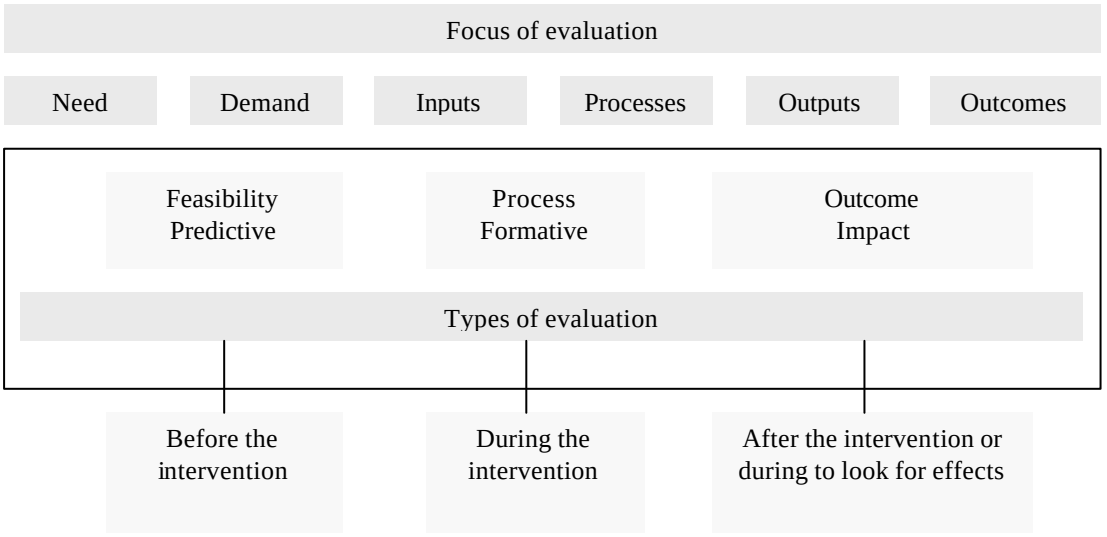
As seen from Table 1 NPA has set up a range of indicators in an attempt to monitor the two main objectives. The following table, provided by NPA officials in Gisenyi, show the values and information sources for these indicators.

The indicators used to monitor and evaluate the programmes are commendable and to a large degree very relevant. In addition they should be evaluated carefully knowing that the Mutuelle programme has only been running for a very short time. The health programme in Gisenyi has been active for many years however. Most of the above indicators (from 5 – 22) relate to objective B of the programme. There are some important issues that need to be raised concerning the indicators and their value to the programme.

First the programme documents (annual reports and planning documents) need to include information not only on which indicators to be used, but on the sources of information necessary for them to be monitored. We can not see that this information is present, and does therefore not guide the implementers adequately towards routine data gathering for evaluation purposes.

Secondly the indicators are not adequately described in terms of their value to the monitoring and evaluation process. By this we mean if they are regarded as process or outcome indicators, showing activity with expected results or the results themselves. It is common to view the different types of intervention related indicators on a continuous scale as shown in the figure below, which is adapted from Øvretveit (1998).

Figure 1: Types of evaluations in relation to focus of evaluation. The continuum from Need to Outcomes. Adapted from Øvretveit (1998), p. 41



Most of the reported activity from the NPA programme (particularly related to objective B) is reported as input indicators. There is also a substantial amount of process related and output (in terms of activity at the different programmes) related reporting. We find that this information is useful and can guide the monitoring and evaluation of the programme. There needs however, to be a description of how these indicators are directly related to the objectives. The description of the relationship between the

objectives and the monitoring process (as presented in the workplan by NPA, Rwanda, 2004) does not include input and output indicators as its main monitoring methodology, but rather aims at process and outcome (or impact) related indicators.

First therefore, there needs to be better coordination between the indicators used in different project documents (annual reports to NORAD with LFA type matrices versus quarterly and annual activity reports). The LFA type matrices use a different set of indicators to those regularly reported in the activity reports. Examples of this include the number of inputs into the different facilities reported in the activity reports and annual report to NORAD, while there is no calculation of the outcome indicators (these are the indicators set as main indicators for the programme).

Secondly the LFA matrices need to address indicators possible for the programme to monitor, rather than outcome and impact related indicators that require large (often household) studies to provide the necessary information. Examples of this include indicators such as mortality rates, morbidity rates, malnutrition rates, child abuse rates etc. Although many of them are reported, they rely on facility based data capturing only those who reach a facility, either to die, to be treated, to report on abuse, to check their nutritional status etc. The rates reported are therefore process and output indicators, and at best case fatality rates within the facility (such as the mortality rate of malaria). They are not outcome or impact indicators.

This evaluation does not want to discourage the use of complicated and resource demanding indicators all together, but it is useful first to show their relationship to the programme and secondly to gather the right information from the right sources for them to be properly calculated.

We would therefore like to encourage NPA to increasingly rely on (and thus report in their annual reports and planning documents) process and output indicators, with a thorough explanation on how they see these indicators related to the outcome and impact of the programme. There are many good reasons for using process and output indicators, including ease of data gathering as well as for programme management and budgeting purposes. We would encourage them to increasingly use information from Health Management Information Systems already in place within the facilities and district health infrastructure. One example could be the introduction of the Emergency Obstetric Care process indicators, as sampled in our survey. Each of the outcome indicators shown in table 2 could be represented by a number of activity and process indicators in a systematic, objective related manner, thus improving monitoring and evaluation capabilities of the programme. Although these indicators are often riddled with deficient quality of information their use contributes to their importance and thus the motivation of their improvement. This type of indicators would more often be output related. If resources permit, it could be useful at given intervals, to conduct larger surveys, perhaps together with government and other actors, which provide additional guidance to the programme. The indicators could therefore be presented in two forms, one form being the quarterly and annual progress of the programme utilizing input, process and output indicators, while the second could describe need, demand and outcome indicators for larger evaluations of the programme at longer intervals of e.g. 5 or 10 years. The following table indicates the type of indicator used, its evaluation focus and an assessment on the adequacy of the information available in order to calculate the indicator. It should be noted that there exists no clear distinction between process and output indicators, and as such this list can be interpreted differently between different

end users. The main point however is to try to help the programme management to better define their indicators in terms of their relationship to the objectives (evaluation focus), the information needed and the feasibility of gathering this information at different intervals.

Table 3. Indicators used by NPA in relation to their evaluation focus and information needed to adequately assess them

Indicator	Evaluation focus	Comments on information needed
1. Number of CHI's initiated and functional	Process indicator	Adequate in programme
2. Percentage of the total population of the health district who are members of the CHI	Process indicator	See comments on Mutuelle
3. Percentage of individuals incorporated within different health Mutuelle associations	Process indicator	See comments on Mutuelle
4. Number of individuals using health services after preventive health training and after Mutuelle started	Process indicator	Adequate in programme
5. Utilization rate	Process indicator	Adequate provided district census is reasonably updated or a population growth rate is known
6. Coverage rate	Process indicator	Given the source of information used this indicator is similar to the accessibility indictor below
7. Mortality rate	Outcome indicator	Not adequate - assume that all deaths occur in a health facility
8. Incidence	Outcome indicator	Not adequate - assume that all cases are brought to the health facility
9. Prevalence	Outcome indicator	Needs a thorough household survey
10 Mortality	Outcome indicator	Not adequate - same as above. This is case fatality rate - difficult to conclude as many factors influence
11. Morbidity	Outcome indicator	Not adequate - again because only morbidity seen in facilities
12. Malnutrition rate of children under 5	Outcome indicator	Not adequate - again because only malnourished seen in facilities
13. Community participation rate to the PNBC activities	Process indicator	Adequate information if monthly supervision reports have access to population figures
14. Violence rate against women	Outcome indicator	Needs a thorough household survey
15. Child abuse rate	Outcome indicator	Needs a thorough household survey
16. Basic rights evaluation	Qualitative	Any appropriate qualitative method adequate
17. HIV infection prevalence in Gisenyi health district	Outcome Indicator	Needs a thorough household survey
18. PLWHA ratio benefiting from income generating projects	Process indicator	Needs a thorough household survey
19. Youth associations contacted and working on the fight against AIDS and rights of youth	Process indicator	Adequate in programme
20. Percentage of the entire population served by the health district with less than 30 minutes walking distance to health care	Process indicator	Present information not adequate – unclear of difference from coverage indicator
21. Number of supervisions made on expected supervisory programmes	Output indicator	Adequate in programme
22. Number of meetings held by members of the health committees at the level of Health Centres	Output indicator	Adequate in programme

3.5 Facility and quality assessment

The facility workload and quality indicators used in this evaluation are presented in Annex 2. The annex includes a short description of the background and use of the Emergency Obstetric Care process indicators. Our findings generally show a reasonably high level of utilization of the services, although it is not possible to comment on equity issues and access. It is also not possible to generalize the findings to a larger area or more institutions than those surveyed. They therefore represent case studies only. We have made a number of observations however:

Table 4. Overview of observations from facility survey

1	Very large number of inpatients in Nyundo Health Centre. Should it be upgraded to hospital?
2	Very low number of outpatients in hospitals. Are there Health Centres close by?
3	Large number of labtests in Gisenyi HC given outpatients.
4	Too low number of labtests in Kabaya HC given outpatients?
5	Extreme number of labtests in Muhororo Hospital. Correct figure?
6	High level of surgical activity given absence of doctors in HC's
7	Nyagisagara well staffed in terms of doctors.
8	Relative large variation in outpatients per population between Kabaya and the other two health centres. Is there bypassing of facilities from low quality to higher quality?
9	Given number of inpatients in Nyundo HC they should have a functioning X ray.
10	Given number of surgical procedures, as well as Caesarean Sections, problematic that Nyundo HC, Kabaya Hospital and Muhororo Hospital report lack of functioning HIV tests.
11	Given number of deliveries problematic that Nyundo Health Centre does not qualify for Emergency Obstetric Care facility. Minimum increase capability to parenteral antibiotics and parenteral oxytocics for BEOC status.
12	In general only 2 of 5 facilities qualify as an Emergency Obstetric Care facility. These are the two hospitals. There should be at least 4 BEmOC per 100,000 and 1 CEmOC per 100,000 population.
13	Gisenyi and Kabaya HC's have lower levels of services (no deliveries and less surgery), but include outreach. Are they close to hospitals? Should otherwise provide delivery services.
14	Nyundo HC should have at least one doctor given number of inpatients, deliveries and surgical procedures.

It is reasonably clear therefore that the population surrounding these facilities utilize them for a variety of ailments and diseases. It is not possible to assess if these services cater for the burden of disease in these districts given the lack of epidemiological information. It is likely that the services provided are focused around the most common infectious diseases. It is not clear if the health centres or hospitals include adequate treatment for mental health diseases as well as other diseases such as diabetes and hypertension. The sampled monthly statistics show that there were no patients with these diseases in the month of august in Nyundo Health Centre. It is likely that the prevalence of these diseases is quite high (Murray and Lopez, 1997) (especially including mental health illnesses) and that the lack of treatment could be due to lack of diagnosing procedures and awareness at the facility. The programme managers should only regarded this as an observation for further reflection.

To sum up the health programme assessment it is therefore not possible to assess if the programme have reached any of its stated health prevention, promotion or quality improvement objectives (table 1) as there is limited data available within the programme to calculate these indicators. Apart from indicators 1-4 (Mutuelle related and commented later in this report), indicator 5 on utilization can be used showing a

low level of utilization. This figure could be expected to increase as the quality of the services increase if the Mutuelle programme is successful. Similarly indicator 21 and 22 can be used for evaluation purposes although it is difficult to assess adequate level of these indicators. An aim could be however, to increase these numbers with an acceptable percentage per year in order to measure success or failure. The rest of the indicators are not valuable given the type of information used to calculate them. They should, as mentioned before, be redefined as process indicators and an indication of information needed provided. There should be an updated and well-kept database available for continuous monitoring of the programme.

Our external audit shows that the quality at the different facilities is not adequate, although it is probably better than similar facilities outside of the programme not supported by donors. Observations on hygiene and standard of infrastructure show that the facilities are in very good order, and it is therefore more the content of the services provided that need further attention. These should include improvement of delivery services standards as well as an evaluation of the adequacy of services related to the prevalence of the burden of disease in the area. It is also likely that the facilities need an increased availability of qualified staff given the level of workload in each facility. This is particularly important in terms of doctors available for the event of complicated deliveries in the facilities providing delivery services.

3.6 Assessing displacement effects of Mutuelle

It is important that the focus on prevention and promotion does not create an either - or policy and priority setting mechanism in which it is opposed to the need for curative care. Adequate curative care in the facilities is vital for preventive services to succeed, demand to be met as well as to maintain population trust in any of the programme components. (Travis et.al. 2004, Filmer et.al. 2000, Gilson 2003).

Assessing the displacement effects of the financing mechanisms of the NPA health programme (through Mutuelle) has important equity dimensions, and should be important to the programme given the overall NPA global equity focus. Displacement effects can occur along a number of domains as the financing mechanism is introduced and adapted. The definition of a displacement effect is the shift of the provision or utilization of services between domains as the intervention is introduced. The shift can typically occur along these domains:

- From Rural to urban
- From Prevention to Cure
- From Old to Young
- From Chronic to Acute
- From low level of services to high level of services
- From Government or Not for Profit to Private For Profit
- Shift of drug supply between private and government
- Shift in wage structures and employment benefits

It is important that the main aims of the NPA health programme present a consistent internal logic given the nature of the most common displacement effects of health insurance schemes. Risk sharing schemes, where health centres are paid per consultation, have a tendency to displace preventive and promotive services to the benefit of curative services. As mentioned earlier population demands curative services

and care and are more likely to join prepayment schemes if such services are provided. Below we will recommend a capitation system that may solve this problem, but this far it is not likely that the promotive and preventive services aimed for in the NPA strategy will be sustained through the prepayment schemes such as Mutuelle. Given the importance of quality for sustained utilization (Mavalankar 2003, Litvack and Bodart 1993), it is therefore vital that NPA continue to support the service provision and quality improvement of the facilities, including curative services and generalized care, for the Mutuelle programme to be successful. Ideally this support should continue for a longer period than the support to the Mutuelle programme as it will take time for the Mutuelle programme to adequately shift enough resources to the facilities for sustained quality improvement.

It is also likely that the prepayment schemes shift services from rural to urban areas if the (needed) quality improvement following the prepayment is more visible in urban facilities. The population will quickly adapt and bypass lower quality services in rural areas and utilize higher quality services in urban areas. (Leonard et.al. 2002). The same challenges apply for services at lower levels to services at higher levels of the health care pyramid. In a country like Rwanda, in which much of the services are provided by the NGO and church agencies, it is important to be aware of possible shifts between these and government services. The Mutuelle fund dispersion should include funds also for these services in order to sustain the services both in the long and short run. Given the present donor climate it is clear that church agency and NGO providers are not likely to be able to substitute reduced income due to shift in utilization of services if government services are provided at Mutuelle subsidized prices. It is also not likely that these government services can substitute the quality and quantity of the church agency and NGO providers, thus resulting in a reduced total supply of services to the population if the not for profit services do not survive. This has been seen in several of the neighbouring countries of Rwanda during the introduction of pooled financing mechanisms such as the Basket Fund in Tanzania. Finally it is likely that prepayment schemes will favor the young and acute ill before the old and chronically ill patients, and is the reason for the scheme to need a large enrolment percentage. These latter issues will be dealt with in detail later in the report.

The NPA project manager, Aynalem T. Giorgis, informed us of possible displacement effects being seen between acute and chronic diseases, young and old (an increase of utilization of older patients was seen) and lower level of services to higher level of services (she mentioned the increased utilization of hospitals as people demanded higher level services). All of these effects are to be expected and must be continuously monitored to maintain a focus on the objectives of the programme. These include not only efficiency objectives but also equity objectives. The displacement effects mentioned earlier should also be monitored with these objectives in mind. It should be particularly noted however, that the programme has only been running since March this year, and as such no large displacement effects can be expected to be seen yet.

4. The Mutuelle insurance scheme in Rwanda

In this chapter we first give an introduction to Mutuelle in Rwanda, then we discuss in section 4.2 the financial potential of the Mutuelles for the health district, based on our estimate for the payments from the Mutuelles to the health district. The flip side of these payments is the possibility of defaults in the Mutuelles, which is discussed in section 4.3. Then we go on to a description in section 4.4 of the fee- and payment systems of the Mutuelles in Rwanda, with specific recommendations for the NPA supported Mutuelles. The recommendations focus on the financial sustainability of the Mutuelles. Section 4.5 discusses the special problems of the NPA supported Mutuelles in Gihundwe health district. Section 4.6 gives advice on the income generating activities that NPA has linked up to the Mutuelles.

4.1 Introduction to Mutuelle

After the genocide in 1994, the international donors provided free health services to the people of Rwanda. However, as the donors pulled out of emergency aid[2], the government introduced a cost recovery system for health services in 1996 by way of user fees, see for example Schneider et al. (2000). As a consequence, it is reported that the demand for health services declined, which is worrisome when the health conditions are as poor as in Rwanda. According to the World Bank (2004), in the year 2002 as much as 20% of the children died before the age of five, as compared to 17% in 1990, that is, before the genocide, but also before the HIV problem developed. Still, 20% is high even by Sub-Saharan standards, in Tanzania for example, the below 5 mortality rate in 2002 was 17%. The relatively low demand for health services may also explain why the below 5 mortality rate has only improved marginally, from 21% in 1995, during the post-emergency period[3].

The reported decrease in the demand for health services and the lack of income to the health centres motivated a pilot prepayment scheme, Mutuelle[4], that was started by the Government of Rwanda (GoR) with technical support from USAID. The program started in 1999 in 53 health centres in the three districts of Byumba, Kabgayi and Kabutare, see Schneider et al. (2000). Later the districts of Bugesera and Mugonero were added to the GoR/USAID supported districts, and also other donors have supported Mutuelles.

[2] According to the World Development Indicators (WDI) published by the World Bank (2004), foreign aid constituted 54% of GNI in 1995, right after the genocide, but only 21% in 2002. This is still high, even by Sub-Saharan standards. Tanzania (12%) and Uganda (11%), for example, were in 2002 less dependent on foreign aid, even though Rwanda has the double national income of Tanzania, when local prices are taken into account by measuring GDP at purchasing power parity (PPP).

[3] The demand for health care is relatively low in Rwanda, that is, health expenditure constitutes 5.5% of GDP in 2001, as compared to 5.9% for Uganda, and 7.8% for Kenya, which are neighboring countries with approximately the same GDP in PPP terms. The high spending in Kenya is probably due to private sector involvement in health care, and may reflect an unequal distribution of health spending. Tanzania, on the other hand, spent 4.4% of GDP on health. We have only WDI data on health spending for Rwanda since 1997, so we are not able to document the reported decline in demand that followed the introduction of user-fees.

[4] In line with other English language literature we use the French-inspired term Mutuelle for these mutual health financing schemes.

The idea was not new in 1999, community based prepayment schemes have been tried in Rwanda before, as well as in other countries in Sub-Saharan Africa, and elsewhere. Bennett et al. (2004) refers to a review reported in Bennett et al. (1998) where they identified 81 community based health financing schemes throughout the world, with the majority being in Sub-Saharan Africa. Musau (1999), with reference to Bennett et al., describes a number of schemes in Congo, Kenya, Tanzania, and Uganda, and they refer to Atim (1998) for information on schemes in West-Africa.

In Gisenyi district, which is the focus of this evaluation, Norwegian People's Aid (NPA) has been active in sensitisation campaigns (which is a term applied for a combination of information and motivation campaigns) since 2001, while collection of prepayments (which is an annual membership fee, or insurance premium) started in 2003, and the actual treatment of members of the scheme started in most health centres as late as in the spring 2004. Since NPA was already active in Gisenyi district, UNICEF decided to support Mutuelles in the two other health districts of Gisenyi province, Kabaya and Muhororo. The implementation of Mutuelle in Gisenyi district differs from the implementation in the two districts supported by UNICEF, and both systems in turn differ from the Mutuelles supported by the GoR/USAID.

In the most successful Mutuelle, which has been supported by GoR/USAID, the proportion of the population being a member was as high as 43.2% in 2002. This is in Bungwe health district, see PRIME (2002). According to personal communication, the membership rate in Bungwe is now even higher. The most successful GoR/USAID Mutuelles generate as much as 75% of the income to their specific health centre, according to PRIME II. The successful Mutuelles have now been in work for four years, and have been studied by Mutuelle organizers from all over the country. However, we must notice that the majority of the Mutuelles are not a success. According to personal communication only 15% of the Mutuelles have been a success. Below we will discuss some factors that seem necessary for success. For more details on these factors, see the manual that PRIME II has prepared in collaboration with the Government of Rwanda (2004), based on PRIME's work as the implementing agency for USAID. Also see Bennett et al. (2004) for an introduction to Mutuelle.

4.2 The financial contributions from Mutuelle to Gisenyi health district

Some stakeholders say they expect Mutuelle to become an important financial contributor to the local health sector. This issue has two different interpretations:

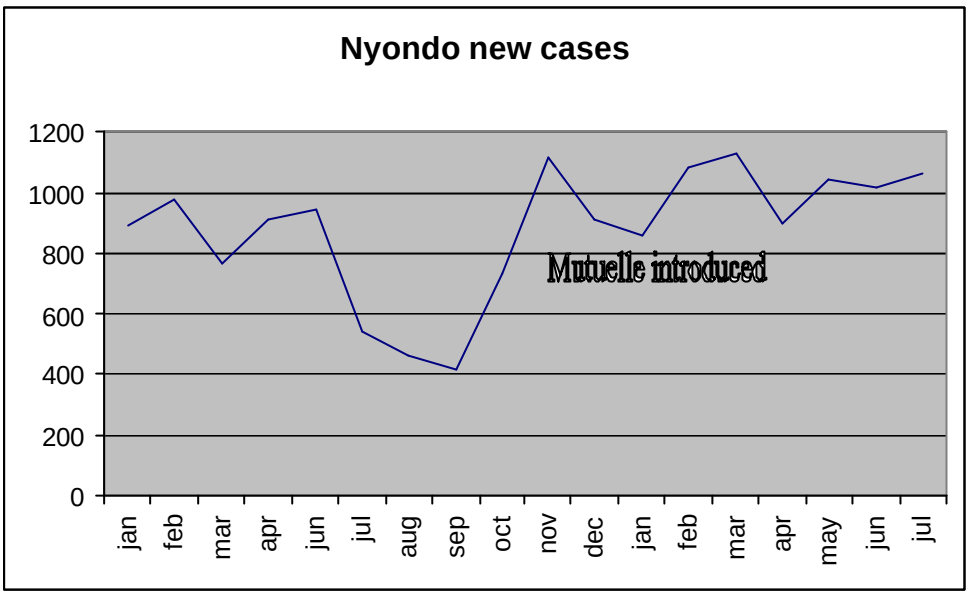
- What is the proportion of the income to the health centre that comes from Mutuelle?
- Will Mutuelle increase the income to the local health centre?

We will provide some estimates based on available data from Nyondo health centre that is supported by the Kanama Mutuelle, which in turn was the first Mutuelle started with support of NPA in Gisenyi district.

The three-four months before the treatment started for the Mutuelle members the treatment-rate dropped, most likely because people postponed the visits to the health centre until the cost would be covered by the Mutuelle, which shows a clear incentive effect. After the treatment started, it has been quite stable at a higher level. One might

believe that the people who got sick during those four months are phased evenly in, or one might think that there is a gradual increase in the permanent treatment rate. So, we cannot say for sure what will happen in the future, maybe the treatment rate will continue to increase, or it will decrease as the back-log is treated. See Figure 1 for the treatment figures.

Figure 2. New cases at Nyondo health centre, data provided by NPA



Before we go on to the detailed calculations, we will point out that we may expect some increase in income, but not necessarily a major increase. The increase will come from the extra money people are willing to pay to avoid high user fees in case of illness. On average, (risk averse) people are willing to pay more in premiums, than they would have to pay on average in case of no insurance. This is why insurance companies are profitable, even though their customers are better informed about the expected costs. So, there is a potential surplus to be captured, either by the Mutuelle, or by the health district. Now, the Mutuelle should not be for profit, so in the long run we shall expect the health district to benefit. This extra income, should in turn be applied to improve the quality of the local health services. Improved quality will, according to the experiences of PRIME II, attract new members to the Mutuelle, which in turn will increase the income of the health district[5].

However, we must already at this stage warn that if the Mutuelle pays the full user fees for their members, then there will be an underlying incentive for the members to use the health facilities more often than they can cover by the prepayments, and the Mutuelle may go bankrupt. To counteract this effect, one may transfer the risk to the health centres by paying them the insurance premium rather than per consultation. In that case the health centres may counteract the patients' incentive for excessive treatment.

We will also remind the reader that increased income to the health district is not the primary benefit of health insurance, the primary benefit is rather the cost-sharing among

[5] This finding is also supported by the literature, see Litvack and Bodart (1993).

the member households. The households pay a premium to avoid catastrophic outcomes in case of illness. Note that this effect is probably largest for the very poor, who should be the most willing to pay the membership-fee. Major medical treatments may be very costly for households that have only subsistence income. Insurance against catastrophic outcomes is probably the most important part of a health insurance, and this is why we will argue below that Mutuelle should cover even full care at the district hospital. This will potentially be very expensive, and the population must cover the additional costs. We suggest below that the members are given two options. Either they pay a 50% co-payment when they get treated, which is according to the present payment scheme in Gisenyi district, or they pay a higher prepayment, where we suggest the double of the present payment.

We will now first estimate the income share of the Mutuelle in Gisenyi, and then go on to estimate the increase in income that is due to the Mutuelle. We have already said that the most successful Mutuelles in Rwanda generate as much as 75% of the income to the health centres. In Gisenyi district, the District Medical Officer (DMO), Dr. Innocent Bayege, has collected information from the health centres regarding the income from the Mutuelles. We focus on a particular health centre, Nyundo, which covers one of the largest populations among the health centres in Gisenyi district, and also is one of the three centres in the administrative district of Kanama, where NPA has the longest running Mutuelle in Gisenyi district. This Mutuelle has collected prepayments since April 2003, and has treated members belonging to Nyundo health centre since November 2003. Only a few people were treated in November, so we will apply treatment data for the seven months from December to June. Since no household is treated for more than one year, we assume that no household has paid more than a single prepayment. We have only fragmented information on membership rates and payments, even for this Mutuelle that has been running for more than a year. The fragments allow us to do some informed guesses when it comes to the actual membership rate and the payments between the different stakeholders.

Nyundo health centre received an income of 1.4 million Rwf from Mutuelle during the seven months they have treated Mutuelle members, according to the data from the DMO. The total for all three health centres is 1.8 million for those seven months. If we now look into the accounts for the health centre of Nyundo, the centre has a total income in the range of 800 000 per month, which for the seven months adds up to 5.6 million. The Mutuelle thus contributes with 25% of the income for the health centre.

Let us now check whether the number of consultations is in the same range. The Nyundo health centre has consultations in the range of 800 per month, which, in line with our own observations, implies approximately 1000 Rwf per consultation, which is either paid by the patient or the Mutuelle. Over seven months this becomes 5600 consultations, or 9600 per year. The latter corresponds to information given to us by the health centre. When it comes to the Mutuelle, the DMO reports 1800 consultations among the members belonging to Nyundo for the same seven months, which is 32% of the consultations. So, apparently the Mutuelle members incur smaller consultation costs than non-members, but we shall remember that all the calculations we do are based on crude estimates, hard data is still not reported from the Mutuelles in Gisenyi.

Now, the membership rate in this Mutuelle is probably relatively low compared to the standard that PRIME recommends, that is, at least 30% and preferably 50% of the population. This recommendation is based on experiences that PRIME II has collected

during their work for USAID and the GoR in evaluating and developing guidelines for Mutuelle. If the membership rate is too low, then there is a serious danger that only the most costly patients will be members.

If we assume that the prepayments have the same distributions between health centres as the consultations, then the members belonging to Nyundo health centre have contributed with prepayments in the range of 4.4 million, according to preliminary reports from the Mutuelle. If we now assume that 1/4 has been paid by households that have not completed their payments, then we are left with 3.3 million in prepayments. Next, if we assume that 20% are single-person households, and we assume 5 people on average for the full households, then we get an average membership fee of 2600, which gives 3300000/2600 = 1270 member households, and an estimate of 1270 * 0.8 * 5 + 1270 * 0.2 = 5300 members belonging to the Nyundo health centre. With a population of 43 000, we may thus calculate a membership rate of 12%. Since the Mutuelle has been around for more than a year, which is the longest period among the Gisenyi Mutuelles, this is probably one of the highest membership rates in Gisenyi district. We are not able to corroborate the estimate, because the full paying members are still not counted.

If we now take the number of consultations of Mutuelle members in Nyondo, which was 1800 for seven months, and assume that the trend will continue, then for a full year we may expect 3100 consultations, which gives 0.6 consultations per member per year. This is half of what is reported for the most successful Mutuelles in Rwanda, see PRIME (2002). So, we may expect higher payments to the health centre in the future, as people get more used to visit the health centre. Also note that if one believes that the correct estimate for the membership rate is higher than 12%, then the treatment rate will be even lower (we know only the total number of treatments). So, if the membership rate is higher than 12%, then the treatment rate is lower than 0.6%.

This far we have tried to estimate the proportion of the income to this particular health centre that comes from the local Mutuelle. However, the Mutuelle contributions might to some extent replace similar payments that would otherwise be by way of user fees[6]. Any *increase* in the payments to the health centre must be the result of either an increase in the consultations per household in the district, or an increase in the payments per consultation. So, when PRIME (2002) report a treatment rate for Mutuelle members that are very high compared to non-members, that will not necessarily mean that the income to the health centre has increased. It is quite possible that the Mutuelle has rather recruited people that most often visit the health centre, and the total number of consultations in the district might stay constant. So, a high treatment rate is not necessarily a success criterion. A high membership rate on the other hand, is probably a good indicator of success, since it implies that also households with fewer consultations will be members.

We have data for new cases in Nyundo health centre for the period when the Mutuelle started treatment, see Figure 1. The figure illustrates a drop in the treatment rate prior to the start in November, and then an increase to apparently a higher level. However, if we assume that the drop happened because people were waiting for free treatment as

[6] One may also imagine that the support from the government might be reduced as the prepayments from the local community increases. Support from donors, on the other hand, might increase, as donors will have a tendency to support local initiatives.

members, then we shall actually expect a higher treatment rate after the free treatment of members started. If this is the case, then it turns out that the higher treatment rate for the nine months after the start does actually not compensate for the drop during the four previous months. So, we may conclude that the Mutuelle has not led to an increase in the number of new cases. Still, the number of consultations per case, and the incomes per case might have increased.

4.3 Potential financial problems in the Gisenyi Mutuelles

Note that with a prepayment of 3000 Rwf per household, and an average bill per consultation of 1000 Rwf, any household will add to a deficit if only four household members visit the health centre once a year. It is thus actually surprising that any Mutuelle is able to run with a surplus. As said, the likelihood of a deficit is higher the smaller is the membership rate, since the first members will tend to have higher treatment costs. So, how is the situation in Gisenyi?

Above we said that the prepayments for members belonging to Nyundo health centre are in the range of 4.4 million, and the payments to the health centre will, if the early trend continues, be in the range of 2.4 million per year, apparently implying a solid surplus. However, we have also calculated the consultation rate to be 0.6 per member per year, which is half of what we may expect. The low rate might be due to the fact that the Mutuelle is started very recently, and one may expect people to visit the health centre more often as they get used to the free treatment. If we rather apply the rate reported by PRIME II for the most successful Mutuelles in Rwanda, then we will have a double cost of 4.8 million, and consequently a deficit. However, this is at the present stage only a speculation. However, it is *very important that the Mutuelles in Gisenyi establish a proper reporting system*. From what we have observed, the books are kept well, but the information is not applied to report the information that is necessary to predict the annual outcome, such as actual membership rates, and the running incomes and costs of different types.

Furthermore, because the presently low rate is probably not sustainable, the Mutuelles must recruit more members. In the next section we will discuss factors that may affect the membership rate. This includes, in particular, reforms of the fee- and payment system that might make it less likely that the Mutuelles get into financial problems.

4.4 The Mutuelle payments systems in Rwanda with recommendations for the NPA supported Mutuelles

In this section we will describe different variations of the Mutuelle payment system that exist in Rwanda, and we will argue that some elements work better than others. In general the standard PRIME II version of the Mutuelle system, which is supported by GoR and USAID, works well, and we base the discussion on that system. For details on the implementation in the NPA supported Mutuelles, see Annex 3.

Households pay a *prepayment in the range of 3000 Rwf*. Then they pay a *co-payment of 100 Rwf* when they visit the health centre, or the district hospital, where they may even have no co-payment. Subject to the low co-payment compared to the costs of hospital treatments, the Mutuelle members only get free treatment for a limited package of services at the hospital. At the health centre all treatment is free for members, including tests and drugs. When it comes to the health centres a typical invoice will be in the

range of 1000 Rwf, consisting of equal size fees for consultation (300 Rwf), tests and drugs.

Then the *Mutuelle either pays according to the invoices*, or they *transfer the prepayments to the health centres and the district hospital* (the so called *capitation system*), less a 5% administration fee. As we can see, in the first case the Mutuelle bears the risk, while with the capitation system the health centre bears the risk. Note that in the first case the health centre will have an incentive to allow excessive treatment, while in the second case it will have an incentive to be conservative with the treatments to keep the costs down. From the Mutuelle members point of view one might argue that the first is not so serious, but then we forget that the Mutuelle, and thus the members, will have to pay the excessive bills. With the capitation system, on the other hand, the Mutuelle will never go into a deficit, but there is a danger that it will not get what it pays for. *We still recommend the capitation system*. This is also in line with recommendations from PRIME II. The potential for under-treatment can to some extent be avoided by intensive control of the health centre. Two such control measures are recommended by PRIME. First, one may hold back a "quality payment" that is only paid when certain indicators are satisfied. Second, monthly member meetings can discuss the quality of the services, and the Mutuelle committee can give feedback to the health district. Finally, one has the threat that members will not renew their memberships the following year.

Note that the PRIME-system covers only a limited package of treatment at the district hospital. This is because the prepayments would otherwise not cover the costs whenever some Mutuelle members become seriously ill. In Gisenyi they have partly solved this problem by charging a 50% co-payment for hospital treatment. We believe that this is necessary, subject to the relatively low prepayment of 3000 per household. An alternative would be to increase the prepayment, let us say to 6000, and charge a low and fixed co-payment, let us say of 300 Rwf, and keep the full package of treatment at the hospital. A third alternative would be to apply the PRIME-system, that is, to make a limited package of services at the hospital, keep the present prepayment, and introduce a co-payment of let us say 300 Rwf.

We will *recommend that Gisenyi district keep the present co-payment at the hospital of 50%*. But, to attract more members, *we will also recommend that Gisenyi district offers an alternative contract where the prepayment is 6000 Rwf per household and the co-payment is 300 Rwf*. While some households may prefer the present contract, the Mutuelles might be able to attract more members by adding a second contract. The prepayment of the second contract should be so high that it is not chosen by people that are relatively healthy, these people should rather prefer the contract where they will need to pay a co-payment in case of illness. The contract with a high prepayment will thus be chosen by people that know that they are not so healthy. Note that two alternative contracts require a system where one can easily see what contract every member has chosen. This can be done by alternative colours of the membership cards.

A special problem exists in Gisenyi that must be solved. The district hospital has not charged the patients with the 50% co-payment that they should pay according to the contract. These outstanding payments might be problematic to charge from the members ex-post. Unless other solutions are found locally, we will recommend that the hospital, which actually did the mistake, and also is likely to have sufficient slack in their budget, shall cover the expenses. In addition, it is important to inform the members

that in the future there will actually be charged a co-payment of 50%. This additional information campaign opens up for the possibility of adding the alternative contract that we suggested above.

We will also recommend a 100 Rwf co-payment for health centre consultations, which today appears to be in use in Gisenyi district. This is to give the patients an incentive not to burden the health centre with minor problems.

Even a prepayment of 3000 might be very high for very poor households. Today the payment can be done as instalments. Instalments are fine, but *we will recommend that the total amount is paid within a pre-determined date.* This is to avoid that people become members when they feel sick, which will counteract the risk-sharing that is the main element of the prepayment scheme. The actual deadline for the prepayment should be when most people have a lump-sum available, which is *after the main harvest season*. In addition we have two suggestions that may help the very poor.

First, *we recommend that NPA pays the prepayment for let us say 3 000 very poor households,* which are distributed between the health centres according to the population, but only after the introduction of the capitation system that we have recommended above. This constitutes approximately 3% of the households in Gisenyi health district. We recommend that NPA covers the highest prepayment in case a second contract is introduced. In that case the total cost will be 18 million Rwf, with on average 3 million Rwf per Mutuelle. This constitutes approximately NOK 200 000 per year. According to the capitation system, the Mutuelle will receive 5%, which is on average 150 000 Rwf, the health centre will receive 85% for the part of the population belonging to each centre, and the district hospital will receive 10%, which will be 1.8 million Rwf for all the 3000 targeted households. The local Mutuelle committee must make a list of target households for each health centre, and then each and every household must be approved by a meeting for those members of the Mutuelle that belongs to that particular health centre. Also note that *we recommend member meetings at the health centre level every month.* For a more detailed discussion of health care financing see Stiglitz (1999), which has to some extent inspired our recommendations.

Second, one may consider co-operating with a credit cooperative, or a bank, that may raise loans to members that cannot pay the prepayment from their harvest incomes. This is implemented elsewhere in Rwanda. In this case it is important to collaborate with a commercially sound credit program that is actually able to collect the loan payments. Otherwise one will again introduce a threat to the sustainability of the health insurance scheme.

PRIME recommends a membership-rate of at least 30%, and preferably 50% of the local population. With the poor reporting routines in the Mutuelles supported by NPA, we would like to revise this recommendation to rather look at the total prepayments. First of all, our advice is that the majority of household members should be full households, such that the risk is shared even within households. Subject to this advice, let us say that 30% of the full households in a community are members of the Mutuelle, and each household has on average five members, then the prepayments constitute 600 Rwf per person. In addition we may count a few single-person households that pay 1000 Rwf. As a crude estimate we thus have a prepayment of 700 Rwf per person, and a crude membership rate of 35%, as a necessary condition for sustainability. These conditions are actually equivalent to a prepayment of approximately *250 Rwf per*

inhabitant. This measure incorporates any other objective we may want to have. To reach such a target, the Mutuelle must either increase the number of members, or make sure that the prepayments are in fact collected from the members they have.

The population belonging to, for example, the Mutura Mutuelle in Gisenyi, is 126 000 people. Applying the proposed *rule of thumb of 250 Rwf per inhabitant*, then this Mutuelle needs to collect 31.5 million Rwf to become sustainable. With 24 000 households, and a prepayment of 3000 per household that would imply 10 500 member households, and thus a membership rate of 44%. At present the Mutura Mutuelle has only collected 10.6 million Rwf as prepayments, far below what we believe is necessary for a sustainable health insurance scheme. The only Mutuelle in Gisenyi that is close to our recommendation is the one in Gisenyi town, where the prepayments are 184 Rwf per inhabitant.

As mentioned earlier, adequate quality health care is a necessary condition for a high membership rate. Albeit with recommendations for improved content of services, as we discuss in chapter 3, we believe that the present quality is satisfactory in Gisenyi district, and the contributions from NPA has been imperative to this. Even though NPA is phasing out their contribution to health services, we will still recommend a minimum supervision activity at least during the 2-3 years it takes to see whether the Mutuelles are able to become sustainable.

As we shall see in the discussion of the Gihundwe Mutuelles, a sustainable income level is a necessary, but not sufficient condition for sucess. The Mutuelles must in addition have a sound reporting system. In annex 1 we suggest a simple report, which will make clear the actual membership rate, as well as types of income and expenditure. This report will become even simpler whenever a capitation system is introduced.

4.5 Additional advice regarding the Gihundwe Mutuelles

NPA has also been involved in four Mutuelles in Gihundwe health district, which includes the town of Cyangugu. With no local office, NPA has not been deeply involved, which may explain why the situation appears to be very critical. As for Gisenyi the reporting system is incomplete, so it is not clear what is the exact membership rate of full paying members. The accounts still appear to be consistent, and the economic situation is very serious. Treatment of members started in January 2004, while prepayments were conducted the year before. In September 2004 there appear to be deficits in all four Mutuelles, with the worst case being the Mutuelle of Nkanka.

In Nkanka they have collected prepayments of 4 million Rwf. They report 4334 households as members, and say that 77% of the households have paid the full prepayment. But, as in Gisenyi, they do not report the number of single-person households, and the amount paid by the households that have not completed the prepayments. So, it is not possible to estimate the number of members. If we take the reported numbers at face-value, then the Mutuelle has 3337 households as members. If we furthermore assume that the remaining 997 have paid only a third of their prepayments, then they will count as 332 households. With these presumptions we may calculate an average prepayment per household of 1115 Rwf. From personal communication we know that households are supposed to pay 3500, and single-person households are supposed to pay 1000. So, if the reported numbers are correct, then the Nkanka Mutuelle has 95% single-member households. If we assume five members per

full household on average then the Mutuelle has approximately 4000 full members that have paid on average 1000 Rwf as a prepayment. If the prepayment per member is as low as 500 Rwf on average, then the number of members would be 8000. Even in that case the membership-rate would be only 25% of the population, while the more likely estimate of 4000 members gives a rate of 12.5%, which is low, as compared to the recommendations of at least 30%, and preferably 50%.

During the eight first months of treatment the Nkanka Mutuelle has received invoices of 6.4 million Rwf from 4514 consultations. That is, close to one consultation per member, and 1400 Rwf per invoice. This is higher than the approximately 1000 Rwf per consultation in Gisenyi. And, with an average of 1000 Rwf in prepayments the prepayments are already spent, and the Mutuelle has a debt of 3.2 millions to the health centre. If consultations continue at the same rate, we must add another 3 million to the debt by the end of the year. It is also noticeable that this Mutuelle has not reported any payment to the district hospital, where we normally would expect the larger invoices. In this Mutuelle we clearly see the incentives that health centres will have to inflate the invoices, and we also see the problems that may arise from a very low membership rate.

If we apply the rule of thumb that we suggest above of 250 Rwf per inhabitant as a prepayment, then another Mutuelle in the district, the Gihundwe Mutuelle, satisfies the criterion with 281 Rwf per inhabitant, while the Rusizi Mutuelle is relatively close with 203 Rwf. Still, the Gihundwe Mutuelle has already a debt. So, a high income as measured by the rule of thumb is only a necessary condition, not a sufficient one for sustainability. The Mutuelle must also keep track of the expenses, which in Gihundwe Mutuelle is 289 Rwf per inhabitant, possibly with the major expenses coming from hospital treatments.

All four Mutuelles of Gihundwe district will end up with a substantial debt at the end of the year if the members get treatment at the present rate. The Mutuelle can only control the situation by proper control of the expenditures. Our advice is that they introduce the per capita transfer of prepayments to the health district as described in our recommendations, and also co-payments according to our recommendations. If they do so, then NPA, or other donors may consider paying the debt. Otherwise, no subsidy should be provided. Furthermore, in particular Nkombo and Nkanka should improve their membership rates, and all four Mutuelles should improve their membership reporting system.

In the worst case, that is, if the health district decides not to agree upon this change in the compensation system, then it might even happen that they will refuse to treat the Mutuelle members this year. In that case NPA may pay the debt, such that treatment will take place for the remaining four months. But, if the health district decides on such a strategy, then NPA should pull out of Gihundwe health district. It is our hope, and recommendation, that the health district, NPA and the Mutuelles can agree upon the capitation system with co-payments as recommended in this report.

4.6 Income generating activities linked to the Mutuelles

NPA has, as an integrated part of the support to the health sector, encouraged local communities, including the Mutuelle organisations, to develop ideas for income generating activities. We will advice strongly against this strategy. It is not likely that the people who are able to run a successful insurance organisation like Mutuelle will at

the same time be successful businessmen. And, if they are able to run a successful business in competition with other local businesses, then a subsidy is actually not needed. We will recommend that commercial projects are left for commercial interests, and any start up cost should be financed by the banking sector, rather than by donor money. NPA may rather spend available funds directly on health, for example by financing the prepayment for the poor, improving and sustaining quality curative services or subsidizing HIV tests or treatment.

In Gisenyi, a major income generating project is a pharmacy. In some cases it might make sense to support a pharmacy, that is, if there is poor competition among the local pharmacies. In that case, the Mutuelle might open a pharmacy to provide the members with medicine at a low price. But, this appears not to be a problem in Gisenyi. First of all, the health centre sells drugs at very low prices[7]. Second, in the neighbourhood of the Mutuelle pharmacy we counted 3-4 competitors. In such a market we shall expect the margins to be small, and most likely the Mutuelle pharmacy will only survive by way of donor support.

[7] According to personal communication the health centre can apparently sell at a low price because it does not have to pay government taxes, and only sell generic products, not branded names as the private pharmacies.

5. The phase-out period

There are several principal ways of determining a phase out period. NPA can either predetermine a time-period or budget ceiling reached, in which they will pull out regardless of programme performance. Alternatively they can pull out given that the programme has achieved certain criteria. In this case there are two principle criteria that could be envisaged met.

The first would be that the programme reaches a level of coordination with national programme initiatives, such as the standardization of Mutuelle that may result from the PRIME II evaluations of the Mutuelles, in which it is possible for others to take over the supervision of the programme accordingly. The other would be that the programme reaches a set of internal achievement criteria. Our recommendations are primarily based on the latter two. For programme continuation over a long period of time it is necessary for the programme to adapt to the national programme strategies in order to benefit from capacity building, monitoring and evaluation schemes within that programme. As the programme stands however, it is also necessary for the present programme to reach a level of internal criteria before NPA pulls out, although we recommend that if there are no signs of these achievements being met, NPA should still pull out given its time and budget limits.

Above we have recommended major revisions to the Mutuelle payment system. We will recommend that these get implemented before the prepayments start for the second year of the Mutuelles in Gisenyi and Gihundwe districts. A major information campaign will be necessary. Then, NPA should follow up with technical support to the Mutuelle during this second year, as well as a third year. If the members renew their membership a third time, then we would expect that the Mutuelle is sustainable. The members are actually the best control we have, if they are not satisfied, they will not pay. We expect the second prepayment to happen in 2005, and the third to happen in 2006. In parallel to the technical support to the Mutuelles the NPA should also gradually phase out the other activities in Gisenyi, with the supervision activities being the last to be phased out. As NPA is pulling out it must find another source of funds, for example Global Funds or the Government of Rwanda, that will take over the responsibilities for the prepayments of the very poor.

In Gihundwe, it is in particular necessary to introduce the capitation system. If they do so, then NPA may continue the technical support. In that case, NPA may also consider paying the debt that is accumulated during the first year. The phase out period must be in line with Gisenyi. If no changes are made in the Gihundwe Mutuelles, then the technical support is not functional, and it is our advice that NPA pulls out of Gihundwe.

It is NPA global policy to support civil society for the improvement of accountable and legitimate social structures with the final aim of development, particularly among the vulnerable groups of a society. Mutuelle is a community based organisational structure in which, if it functions properly, is embedded in and a function of the needs and demands of a community. Mutuelle has the potential of on the one hand providing quality health services and on the other increase the relevance of the services to the demands, as well as to contribute to the overall capacity building of the society. It should therefore be a useful strategy for NPA to pursue. It should only be pursued

however if adequate quality of both the services provided and the Mutuelle programme can be secured.

6. Recommendations

6.1 Main recommendations

1. Ensure improved and sustained quality of health services content to ensure adequate preventive and curative services as well as cater for the burden of disease profile to ensure utilization of services and enrolment in Mutuelle
2. Restructure the Mutuelle programme to ensure gradual compliance with the most successful Mutuelles that have been supported by the PRIME II program, and to increase enrolment rates and improve reporting procedures for monitoring and evaluation.

6.2 Recommendations for Mutuelle

1. Introduce the capitation system: Prepayments should be automatically transferred to the health district, with 85% to the local health centre, and 10% to the district hospital. This replaces the per consultation payments.
2. The 3000 Rwf prepayment, with a 50% co-payment at the hospital should be sustained.
3. We recommend a 100 Rwf co-payment per consultation at the health centres.
4. An additional contract should be considered, where the prepayment can be 6000 Rwf, and the 50% co-payment at the hospital is replaced by a co-payment of 300 Rwf. Members must be allowed to choose between the two contracts.
5. Prepayments should be done no later than a fixed date, preferably right after the major harvest. The local Mutuelles may allow instalments before that date. One month after the deadline treatment can start.
6. We recommend that NPA, or other agencies, pay the higher prepayment of 6000 Rwf for in total 3000 households in Gisenyi health district. The households should be approved by the members.
7. There should be member meetings, at the health centre level, every month.
8. The Mutuelles may consider collaboration with an independent and commercial credit cooperative or bank with respect to loans to pay the prepayment.
9. As a rule of thumb, a Mutuelle should have prepayments equivalent to 250 Rwf per inhabitant in their area to ensure sustainability.

6.3 Recommendations for NPA

1. NPA should not give any direct financial support to the Mutuelles before the capitation system is in place.
2. We advice against financial support to income generating activities.
3. NPA should gradually phase out the local office in Gisenyi, with the last activities taking place in 2007.
4. We recommend that NPA rents office facilities from the Gisenyi health district, and we recommend a staff of two people, a nurse who is responsible for supervising the health centres together with the health district, and a public health expert who is responsible for technical support to the Mutuelles.

6.4 Recommendations for the health services in Gisenyi district

1. Adjust regular programme indicators to better reflect core outcome and impact objectives by use of input, process and output indicators systematically.
2. Improve feasibility of information gathering for monitoring and evaluation by utilizing the available Health Management Information System and simplify indicators.
3. Include source of information needed and used and indicator formula in planning and reporting documents.
4. Provide short term (input, process, output) and long term (outcome, impact) indicator sets.
5. A long term goal for Gisenyi health district must be to maintain the adequately provided facility infrastructure.
6. Review workload and output relationships such as number of labtests and deliveries for efficiency evaluation.
7. Review services to expected diseases such as mental health, diabetes and hypertension.
8. Improve quality of curative services at facility level (such as the obstetric care capability).
9. Increase availability of qualified human resources.
10. Be aware of and monitor displacement effects of the Mutuelle programme and adjust according to efficiency and equity parameters.
11. Maintain support to health service delivery beyond support to Mutuelle to ensure quality for sustained and increased utilization.

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Annex 1

Annual report for Mutuelle

Name of Mutuelle:
Period:

Prepayments:	Number	Sum
3000 1000 >3000 Incomplete payment households Incomplete payments individuals		
Sum of members:		
Paid more than once:		
Other incomes:		
Subsidies: (NPA) Businesses: (Pharmacy)		
Invoices paid:		
Health centre:_____ Health centre:_____ Health centre:_____ Hospital:		
Other costs:		
Salaries: Rent:		
	Surplus: Ingoing balance: Outgoing balance:	

Annex 2

Health facility survey

Background on the use of Emergency Obstetric Care process indicators.

It is important to provide decision makers with improved knowledge of actual quality and level of services supplied. We believe that this will enable improved resource allocation and health care planning.

As a tracer policy this evaluation attempts to identify the level of Reproductive Health services in facilities surveyed. We have chosen to specifically identify services aimed at reducing Maternal Mortality. This is particularly important given the high level of Maternal Mortality in Rwanda (810/100,000).

De Brouwere et.al.(1) underline that maternal mortality in itself is not a good indicator for the assessment of maternal health care programmes, and maternal health. Rather it is important to assess the unmet obstetrical needs, showing the relative importance of adequate provision of care. Monitoring Maternal Health has therefore moved away from impact measures towards process measures as an accepted proxy (2).

Bertrand and Tsui (2), Nirupam and Yuster (3) and the WHO are among many providing comprehensive efforts to select useful process indicators towards Reproductive Health Program Evaluation. This article will use the framework proposed by UNICEF / WHO and UNFPA (UN Guidelines) (4).

The UN Guidelines have set certain acceptable levels that, although approximate as guidelines, can also serve as useful references for evaluation. They are based on the assumption that at least 15 per cent of all pregnant women will develop serious obstetric complications (5). Table 1 gives an overview of the questions and indicators chosen for this article, their formulas and acceptable levels for comparison. These guidelines have been increasingly used to evaluate availability of quality delivery services (6-12).

The data collection tool was based on the UN Guidelines for defining and monitoring the Emergency Obstetric Care units. Reviewing relevant documents and asking the following question during the interview with the facility managers determined the EmOC status of every facility:

Were the following services performed at least once during the last 3 months (Yes/No):

1. Parenteral antibiotics?
2. Parenteral oxytocics?
3. Parenteral sedatives / anticonvulsants?
4. Manual removal of placenta?
5. Removal of retained products?
6. Assisted vaginal delivery?
7. Blood transfusion?
8. Caesarean Section?

If the facility had performed all of 1-6 functions they were considered Basic Emergency Obstetric Care units (BEmOC). If they additionally performed 7 and 8 they were considered Comprehensive Emergency Obstetric Care units (CEmOC). The target of the WHO/UNFPA guidelines are 4 BEmOC units per 100,000 population and 1 CEmOC unit per 100,000.

The other indicators sampled from the 5 health facilities included general indicators on workload and availability of human resources and equipment. The results were as follows:

Table A 1: Results of facility survey workload, resources and quality indicators

Workload

Name of facility	Inpatients	Outpatients	Labtests	Surgery	Delivery	Vaccinations	Outreach	Ambulance Trips	Catchment population
Gisenyi Health Center	0	8700	6116	238	0	1284	y	0	37863
Kabaya Health Center	0	11847	1488	258	0	2179	108	324	70629
Nyundo Health Center	1228	9876	3669	433	907	1234	0	461	37665
Kabaya Hospital	1772	1139	8052	262	445	0	0	37	216804
Muhororo Hospital	745	1060	421357	80	311	0	0	300	166072

Available resources

Name of facility	Xray	Lab	Malaria	HIV	TB	Toilet	Drugs	Sterilization	Doctors	Nurses	Other staff
Gisenyi Health Center	n	y	y	y	n	y	y	y	0	13	6
Kabaya Health Center	n	y	y	y	n	y	y	y	0	7	6
Nyundo Health Center	n	y	n	n	n	y	y	y	0	9	10
Kabaya Hospital	y	y	y	n	y	y	n	y	2	16	21
Muhororo Hospital	y	y	y	n	y	y	y	y	8	7	17

Table continued

Quality assessment

Name of facility	Parenteral Antibiotics	Parenteral Oxytocics	Parenteral Sedatives	Manual Removal of Placenta	Removal of Retained Products	Assisted Vaginal Delivery	Blood Transfusion	Caesarean Section	Qualified BEmOC	Qualified CEmOC
Gisenyi Health Center	y	n	n	y	n	n	n	n	n	
Kabaya Health Center	y	n	y	n	n	n	n	n	n	n
Nyundo Health Center	n	n	y	y	y	y	n	n	n	n n
Kabaya Hospital	y	y	y	y	y	y	y	y	y	y
Muhororo Hospital	y	y	y	y	y	y	y	y	y	y

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Annex 3

Details on the NPA supported Mutuelles

This details are provided by Project Manager Aynalem T. Giorgis.

Contribution and the benefit of the population in the Mutuelle in GiHUNDWE Health District:

The population decided in a meeting through their representatives to pay

- 3500Rwf for a family of two to seven persons and additional 500Rwf for those who are more than seven in the family and less than 18 years old.
- 1000Rwf for an Individual adult and students in secondary school.
- The members will pay 150Rwf when they visit the health service .
- They are entitled to all the services given in the health centre. Curative, preventive and promotional ex. Consultation, medication, vaccination, nutrition, IEC, ANC, Delivery and Ambulance service.
- when they are referred to the District Hospital they will have Consultation, delivery, medication and hospitalisation in the ordinary class.

Contribution and the benefit of the population in the Mutuelle in Gisenyi Health District:

The population decided in a meeting through their representatives to pay,

- 3000 Rwf for a family of two to seven persons and additional 500Rwf for the 8th child, 400Rwf for the 9th, 300Rwf for the 10th, 200Rwf for the 11th and 100Rwf for the 12th child. Free for those above that.
- 1000 Rwf for an Individual Adult above 18years old.
- The members will pay 100Rwf when they visit the health service.
- They are intitled to all the services given in the health centre. Curative preventive and promotional ex. Consultation, medication, vaccination, nutrition, IEC, ANC, Delivery.
- when they are referred to the District Hospital they will have services by paying half of the cost ex. severe malaria, Consultation, Delivery by Cesarean section, medication and hospitalisation in the ordinary class.

Summary

The report was commissioned by Norwegian People's Aid (NPA) with funds from NORAD. The evaluation looks into NPA's support to health services in Gisenyi district of Rwanda. The focus of the evaluation is on Mutuelle, a community based health insurance scheme. The evaluation has a number of recommendations for reforming the Mutuelle, which may contribute to financial sustainability. A necessary condition for sustainability is a high membership rate, which in turn depends on the payment scheme as well as the quality of the health services. We recommend that the premiums must be transferred automatically to the health centre and the district hospital. This will ensure financial sustainability for the Mutuelle and the risk is transferred to the health district that can more easily bear the risk. In addition, small co-payments must be applied to avoid excessive use of the health services. We also suggest a second voluntary contract, where the prepayment is higher than in the present contract, and the co-payment is smaller. Finally, we suggest that NPA, or other agencies, pays the prepayment for the very poor.

ISSN 0805-505X
ISBN 82-8062-108-3

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