Determinants of viable health insurance schemes in rural Sub-Saharan Africa

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Abstract:
The majority of Sub-Saharan African citizens – informal sector workers and the rural population – have never had access to wage-based social health insurance or privately run health insurance. As a response to the lack of social security, to the negative side-effects of user fees introduced in the eighties and to persistent problems with health care financing, non-profit, voluntary community-based health insurance (CBHI) schemes for urban and rural self-employed and informal sector workers have recently emerged. CBHI seems to be a promising attempt to improve access to health care, health outcomes and social protection in the case of illness. Given the unique ethnic, lingual and cultural diversity within African nations, the CBHI approach may be particularly valuable because it allows adaptation to local conditions. The actual implementation of CBHI schemes in Sub-Saharan Africa has had mixed results so far, with viability and acceptance largely depending on design and management of the scheme, community participation, regulations at the level of the health care provider, quality of services and on the socio-economic and cultural context. Small-scale health insurance can supplement other sources of finance rather than being a substitute for them. Further research is required to identify appropriate measures and instruments to overcome the identified limitations of CBHI schemes.

Key words: health insurance, poverty, rural development

1) Introduction

Health insurance schemes are an increasingly recognised factor as a tool to finance health care provision in low income countries (WHO 2000). Given the high latent demand from people for health care services of a good quality and the extreme under-utilisation of health services in several countries, it has been hoped that social health insurance may improve the access to health care of acceptable quality. Whereas alternative forms of health care financing and cost-recovery strategies like user fees have been heavily criticised, the option of insurance seems to be a promising alternative as it is a possibility to pool risk transferring, unforeseeable health care costs to fixed premiums (Griffin 1992). However, there is strong evidence that neither purely statutory social health insurance nor commercial insurance schemes alone can significantly contribute to increase coverage rates and thereby the access to health care. Especially in the environment of rural and remote areas unit transaction cost of contracts are too high leading often to a state and market failure (Jütting 2000). As a consequence in low-income countries the majority of the population remains uncovered against the risk of illness (World Bank 1994).

1 For a discussion of the outcome of user fees see e.g. Gilson (1998) and Sauerborn et al. (1994).
Partly as a response to this lack of social security, to the negative side-effects of user fees and to persistent problems with health care financing, non-profit, voluntary insurance schemes for urban and rural self-employed and informal sector workers have recently emerged. These schemes are characterised by an ethic of mutual aid, solidarity and the collective pooling of health risks (Atim 1998, Ziemek and Jütting 2000). This paper shortly describes the economic reasoning behind the introduction of community based health insurance (CBHI)\(^2\) schemes, shows their geographical distribution in Sub-Saharan Africa together with their size and period of foundation, and discusses lessons learned from their implementation.

2 Economic aspects of community based health insurance

The principle of insurance – sharing risks by pooling resources and transforming a low-probability, but immense expected loss into a certain, but very small loss (Griffin 1992) – is well-known in developed countries and frequently used for financing and allocating health care. Though there are strong arguments in favour of universal coverage of health insurance that can be brought about by mandatory membership, this type of health insurance is not feasible in an environment where most people are either self-employed or informal sector workers (Creese and Bennett 1997). In Africa these institutions have taken the form of local initiatives of rather small size that are community-based with voluntary membership. They have either been initiated by health facilities, NGOs, local communities or cooperatives and can be owned and run by any of these organisations (Atim 1998, Criel 1998b).

Which benefits for public health, welfare and revenue generation can be expected to go hand in hand with the development of viable insurance schemes of this kind in rural areas? In Figure 1, possible dynamic interactions between demand and supply in the health care system are outlined, as they could take place after health insurance is offered to rural people in a low-income country. Explanations are given in the following with reference to the demand and supply aspects, respectively.

2.1 Demand side

Assume that a health insurance scheme has been set up and that some people are willing to test the new financing option and demand health insurance, that is, they decide to pay the premium and become members for one year. A certain proportion of the insured will fall ill during that time and need care at the hospital or health post. Financial barriers to access are removed for them by the insurance: in spite of possibly lacking cash income at the time of illness and of user fees being relatively high with respect to their income, they can readily get treatment at the health facility. As a consequence, they do not have to search for credit or sell

\(^2\) The term CBHI is used here to refer to non-profit health financing schemes that include a predominant role of collective action in raising, pooling, allocating/purchasing and/or supervising the management.
assets, and they recover more quickly from their illness because there are no delays in seeking care. Considering the fact that people in rural areas rely mainly on their labour productivity and on assets like livestock for income generation, a serious decline of income can be prevented as productive assets are protected and people can return to work sooner. Income is stabilised or, taken the sum throughout the year, may be even increased. Consumption will be more stable and probably even higher, which consequently would have beneficial effects for the health of all household members. Both increased consumption and better health contribute to overall welfare. Furthermore, the positive experience of some households or community members with health insurance in terms of immediate access to care and benefits for their health may create trust in the new institution, and will convince people to prolong their membership and lead others to join the scheme.

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3 The household is defined here as a decision-making unit, though some decisions, for example, to seek care in the case of illness or not, may be taken by individuals (e.g., the breadwinner). Moreover, many schemes do not offer membership to individuals, but only to households or families. Of course, a deeper analysis of the equity effects of CBHI (which is beyond the scope of this paper) should take into account the impact of schemes on the intra-household allocation of resources.

4 In some settings membership rates nearly doubled in the second and third year after foundation of a CBHI, when people became aware that the scheme was working and gained confidence in its benefits (Garba and Cyr 1998).
Figure 1: Dynamic interactions between supply and demand for health insurance and health care

Health Care Provider

- quality of care ↑
- supply of care ↑
- resource mobilisation ↑
- membership ↑
- administrative costs per contract ↓
- risk pooling ↑
- premium levels ↓
- utilisation of health care ↑ (better quality)
- immediate access to care for the sick ↑
- insured ↑ (number & coverage rate)
- confidence to get „value for money“ ↑

Households/Community

- health status ↑
- labour productivity ↑
- demand for health insurance ↑
- income ↑
- welfare ↑

Source: own presentation
1.2 Supply side

Given the fact that people may be willing to spend more money on secure access to health care than they can actually pay as user fees at the time of illness for the reasons stated above, and that the healthy carry the financial burden of illness together with the sick via the insurance scheme, additional resources may be mobilised for health care provision. Utilisation of health facilities will probably increase – a desirable effect if one considers currently prevailing under-utilisation in developing countries (Dor and van der Gaag 1993, Müller et al. 1996) - therefore at least part of these resources could be used up for expanding access. Under the assumption that there is net revenue generation in spite of higher utilisation rates, the hospitals or health facilities will utilise the financial means to improve quality of care – for example, by increasing drug availability and purchasing more necessary medical equipment. Better quality of care will increase the expectations of people to get value for money in the case of illness and will again enhance demand for insurance.

More demand for insurance and accordingly increased membership could drive down the administrative cost of insurance provision per member, and risk pooling is enhanced as more people participate – consequently, risks become more calculable. Though the idea of rising demand usually suggests rising prices, in this case it could result in reduced premiums due to “economies of scale” (McGuire et al. 1989). Lower premiums will probably once again increase demand for insurance and coverage rates. Besides acting as an agency that expresses the interests and needs of its members, the CBHI can try to promote the use of preventive care and healthy behaviour (Garba and Cyr 1998). Health education and sensitisation for health problems would improve public health outcomes and counteract cost escalation.

The scenario presented here seems very promising, but it may be far too optimistic about what can be achieved by introducing health insurance alone as a new institution in rural areas. The benefits described here – improved quality of care, increased access to health care, better health outcomes, higher and more stable incomes - cannot be realised if some serious pitfalls are not taken into account in the scheme design, if the CBHI is badly managed or if impeding factors at the health facility or household level cannot be overcome. Keeping the balance between mobilisation of resources by means of insurance on the one hand and increasing costs for health care provision due to higher utilisation rates on the other hand may turn out to be a considerable problem. The relevant design features for adequately addressing this problem are discussed together with other critical issues in the following chapters, after a short review over the emergence of CBHI in Sub-Saharan Africa has been given.
3 Community based health insurance: an emerging movement

The map in Figure 2 gives a view of health insurance schemes outside the formal employment sector in Sub-Saharan Africa (schemes limited to formally employed people, like teachers’ funds, were not included). This summary is inevitably incomplete, because not all existing schemes have been included in the literature. But not many schemes will have escaped attention, as extensive research has been done in the past few years in order to build up an inventory of CBHI (Bennett et al. 1998, Atim 1998, Musau 1999). The majority of the schemes has come into existence in the nineties, therefore it is justified to call CBHI an “emerging movement” - especially as numerous new schemes, which are not indicated on the map, have been planned or already reached the take-off phase since 1998 (Debaig 1999).

The map clearly shows that so far, CBHI is more common in West Africa than in Central or East Africa. In some countries, these new schemes are mainly an urban phenomenon – such as in Côte d’Ivoire and in Tanzania – whereas in other states, they are predominantly covering people in rural areas; examples are Uganda, Ghana and Benin. In Senegal, community-based health insurance has a long tradition especially in the Thiès region and currently over 15 schemes in urban and rural areas are operating (Tine 2000). In the Democratic Republic of Congo – the former Zaire – health insurance schemes mainly came up in the second half of the eighties. The reason for this relatively early departure was the virtual stop of government funding for health care in the mid-eighties and the resulting need to rely on other sources of finance (Criel 1998b). Similarly, the Abota scheme in Guinea-Bissau was initiated already in 1980 in the face of the breakdown of government funding for health care. In contrast to this, all CBHI schemes that currently exist in Ghana, Benin, Mali and Kenya were founded in the nineties. In Ghana and Kenya they originated from the search of mission hospitals for new sources of finance in a time of reduced government subsidies and declining external support, after the practice of levying user fees had proved dissatisfactory for well-known reasons (Creese and Bennett 1997).

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5 The initiators of each of these schemes and its history of origins are documented in Bennett et al. 1998.
Figure 2: Urban and rural health insurance schemes in Sub-Saharan Africa – year of inception and size

Legend

- • < 1,000
- • 1,000 - 10,000
- • 10,000 - 100,000
- • > 100,000
- ○ unknown

Year of Inception
- • before 1979
- • 1980 - 1984
- • 1985 - 1989
- • 1990 - 1999

Notes: For some schemes, the location is only approximately indicated due to lack of exact data or other problems.

Some of the schemes are confined to a local cooperative of craftsmen or traders, therefore they are often very small and may cover less than 100 beneficiaries (Kiwara 1997). Other CBHIs are extended over the whole country and many communities and include up to 1 million or even more beneficiaries (Bennett et al. 1998). The number of beneficiaries can change rapidly and neither reveals the financial balance of the CBHI, nor does it say much about the scheme's sustainability. Indeed, a few schemes had to be terminated after some years (Criel 1998b, Bennett et al. 1998), whilst others have been in operation for decades. Reasons for success or failure, as they have been identified so far, are presented in the next section.

4 Determinants of viable health insurance schemes

The ultimate benefit to be expected from CBHI for the population is its potential positive impact on health and social security. The most important questions for the evaluation of schemes are therefore the following:

1. Has the scheme improved the access to health care and reduced the financial burden for its members in the case of illness?
2. Are the schemes financially and institutionally sustainable?
3. In a more medium to long term perspective: Has membership in a CBHI an impact on labour productivity, health outcomes and income?

Whereas there is some evidence on the first two questions available, the authors are not aware of any completed empirical study on the third question. This is an important upcoming area of future research.

Factors influencing long-term viability can be identified, e.g. high participation rates among the target population contribute to financial sustainability and are a rough indicator for the acceptance of the scheme. A comprehensive assessment of the 48 CBHI schemes shown in the overview map (Figure 2) is far beyond the scope of this article, and the interested reader is referred to Bennett et al. 1998 (world-wide inventory of schemes outside formal sector employment, including their basic characteristics), Atim 1998 (Mutual Health Organisations in West- and Central Africa), Musau 1999 (CBHI in East Africa) and Criel 1998b (district-based health insurance in the former Zaire and Rwanda) for further information. The findings presented here are restricted to general conclusions from the experiences described in these publications, and to the findings of a recent study by Jakab et al. (2001) focusing on the impact

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6 For 24 out of the 48 schemes depicted in Figure 2, participation rates are reported in the literature. For one third of them, they are ranging beneath 10%, and only five out of 24 cover more than half of the target population (figures are derived from data published in Bennett et al. 1998 and Musau 1999).

7 The study by Jakab et al. (2001) is the most recent and comprehensive study on the impact of community financing. Based on household surveys in four countries – India, Rwanda, Senegal, Thailand – and with the same methodology the determinants of participation of
of CBHI on the access to health care in four countries. It turns out that the main factors determining viability, membership and improving access to health care are related to the following three fields:

1. scheme design and management
2. existence and behaviour of health care providers
3. household and community characteristics

They are discussed in the following sections.

3.1 Scheme design and management

The following points have to be considered in the design of a CBHI scheme:

- design of benefit package and premium
- general problems in insurance markets: moral hazard, adverse selection and covariant risks
- accounting and management
- community participation

Design of benefit package and premium

From the point of view of public policy, an important problem of local organizations providing insurance, health care or other services is their difficulties to prevent social exclusion. Whereas donor agencies and policy makers tend to take it for granted that with the help of these institutional innovations also the poor and the poorest are reached, empirical evidence question this assumption (Weinberger and Jütting 2000, 2001). Hence, it is important that the benefit package of CBHI schemes is affordable and include basic services tailored to the health care needs and preferences of the local population. Beside the total amount of the premium, a certain flexibility in the paying procedure has an influence on the targeting of the poor. In the case study of Rwanda the households who could not afford to pay the premium in one bit, were allowed to pay in instalments to a tontine before joining a pre-payment scheme. In addition, church based groups collected fees for the indigent, disabled, orphans etc (Jakab et al. 2001). The paying of contributions by charitable organizations has also be reported in the Senegal study, which has given otherwise excluded people the chance to participate in the mutuals. Some mutual even start collective activities from which they use some of the earnings to pay membership fees (Jütting 2001). Finally, premium collection should be performed during the season when cash income is highest.
Dealing with general problems of insurance markets

Moral hazard behaviour of insured persons presents a permanent threat to the financial sustainability of the schemes: as insurance lowers the price of care at the point of use and removes barriers to access, utilisation of health facilities will increase (Manning et al. 1987) – surely a desirable effect given the current under-utilisation of facilities in developing countries. But health care costs may grow far more rapidly than resources mobilised through premiums – an effect which can quickly jeopardise the scheme’s financial viability. Furthermore, some provider-payment mechanisms like fee-for-service reimbursement give incentives for the provision of unnecessary and expensive treatment to insured patients (McGuire et al. 1989). These problems can be tackled by appropriate provider-payment mechanisms and by levying small co-payments at the point of use (Criel 1998b).

Voluntary insurance is also prone to adverse selection problems: the people most likely to join a voluntary scheme are high-risk individuals such as the chronically ill, who anticipate a high need for care. Due to this self-selection, the claims made to the scheme will exceed its revenues by far if premiums are based on the average risks in the community. As a consequence, premiums would have be to raised and insured persons with a relatively lower risk than other members would drop out of the scheme, and would therefore again increase the health care cost per insurance member (Chollet and Lewis 1997). To prevent insurance market failure induced by adverse selection, it should be required that people join as groups, e.g., that all household members are enrolled, to make sure that membership is composed of both healthy and sick people. Furthermore, waiting periods should be established to prevent people from joining just after they have fallen ill (Musau 1999).

A third problem of insurance markets is the dealing with covariant risks: CBHI schemes are usually of small size and cover only a limited area making them especially prone to this type of risks. A person’s risk of needing care is not independent from his or her neighbour’s health: the risks of falling ill are correlated especially in cases where natural disasters or epidemics hit a certain region or village. The fact that such disastrous events can rapidly deplete the financial reserves of the scheme calls for public-private partnership, either in the form of reinsurance contracts with private insurance companies or as an agreement with public institutions that can provide subsidies to minimise deficits (Jütting 2000). For example, a malaria epidemic in south-western Uganda cost the Kisiizi Hospital Health Society around 8.5 million Ugandan shilling (about 6500 US$). As a consequence, from January to December 1998 no more than 64% of treatment expenditures were covered by the scheme’s revenues – without the epidemic the cost recovery rate would have amounted to nearly 90% (McGaugh 1999). Though no formal public-private partnership contract had been signed with the Ministry of Health, the ministry has implicitly accepted responsibility for losses due to epidemics and has reimbursed the associated expenses to the scheme (Musau 1999), acting as public reinsurance agency.
**Accounting and management**

Besides initial scheme design, management capacity is important to run the scheme on a day-to-day basis and make necessary adjustments (Musau 1999). CBHI are often set up by voluntary, non-profit-oriented organizations. These organizations act as an insurance broker between the interest of a health care provider and the expectations and needs of their members. To deal with these ambiguities is of major importance and requires trained personal. In this context it must be stressed that the administrative procedure for handling claims should be as simple and transparent as possible. Various examples show that mutual insurance schemes are likely to perform better, when they are linked to an organization which already has experience in the field of financial services and social protection (Jakab et al. 2001). Scheme managers are usually charged with financial control, i.e. investment of funds to prevent the erosion of resources by inflation, eventually with negotiations with providers (in case the scheme is not managed by a health facility), with keeping records of all members, received contributions and expenses. Proper book-keeping that provides essential information about the scheme’s financial balance and accountability of scheme managers vis-a-vis the community have been found to be important (Creese and Bennett 1998). Abuse of funds - a very detrimental type of mismanagement - can quickly erode confidence into the scheme.

**Community participation**

The degree of community participation in the design and running of the CBHI can vary widely and is usually greater if funds are owned and managed by the members themselves than if schemes are run by health facilities. If members can identify themselves with “their” schemes because they control the funds and have decision-making power, they will tend less to unnecessary use of health care services. The findings from the Jakab et al. 2001 study suggest that creating a sense of ownership and trust is important to control for moral hazard and for the acceptance and institutional stability of the scheme in general. To achieve this, regular community level meetings and workshops, where the members of the community could express their views on the design of the scheme contribute are helpful.

Community participation in the design of the scheme can also facilitate health education and sensitisation of members in order to promote healthy behaviour and the use of preventive services, as the members share a common interest in keeping the costs of health care low. For example, the members of a self-governed CBHI comprising several villages in Benin realised that many cases of sickness and a considerable amount of health care costs reimbursed by the scheme originated from one distinct village. In consequence, CBHI members of

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8 Schemes managed by health facilities are often initiated with the main goal of resource mobilisation; they are probably less responsive to consumers’ interests and do not provide enough incentives for quality improvement (Creese and Bennett 1997) - the latter may be crucial for enhancing the demand for insurance.
that village and the local nurse organised sensitisation sessions on water hygiene and vaccination (Garba and Cyr 1998). Members of the Kisiizi Hospital Health Society in Uganda cited health education on preventive medicine as one of the main benefits of the scheme (Musau 1999).

3.2 Existence and behaviour of health care providers

The success or failure of health insurance schemes is largely dependent on the existence of a viable health care providers, e.g. to the hospital that offers services to the insured. Decisions taken by the health care provider have an impact on mobilizing demand for the schemes as well as on the financial balance of the scheme. The case study of Senegal was enlightening in that respect (Jütting 2000): From the beginning of the mutual health organization movement, it has been supported by the hospital St. Jean de Dieu. The administration of the hospital had recognized that their ultimate target group – the poor – couldn’t pay their fees, but it was also not possible for the hospital to allow for a general exception of fees for the poor. The creation of mutual health organization allowed to directly target their clientele in a cost effective manner. Beside the financial support which the hospital gives to the mutuals an equal important point is the well recognized quality of care. The delivery of services with high quality is a very important point for mobilizing demand in the mid to long run. In some settings it will even not be possible to set up a viable insurance scheme and mobilize demand before quality of care is not improved, because if people feel that they will get no “value for money” at the hospitals or health posts, they would be unwilling to pay premiums.

In some settings, it will not be possible to set up a viable insurance scheme and mobilise demand before quality of care is not improved, because if people feel that they will get no “value for money” at the hospitals or health posts, they would be unwilling to pay premiums. Frequently complaints are raised about shortage of drugs and other supplies, rude personal, dirty hospitals, or poor security (Batusa 1999). Therefore, such problems have to be addressed first, and quality improvement should not be expected as an outcome of resource mobilisation via insurance, but has to be considered as a necessary precondition for successful implementation of CBHI.

3.3 Household and community characteristics

The demand for health insurance is a crucial factor if the benefits expected from community financing schemes are to be realized. The demand of households for health insurance depends not only on the quality of care offered by the health care provider, on the premium and benefit package, but also on socio-economic and cultural characteristics of households and communities.

Widespread absolute poverty among potential members can be a serious obstacle to the implementation of insurance. This argument was frequently put forward from non-members in Senegal. If people are struggling for survival every day, they are less willing to pay insurance premiums in advance in order
to use services at a later point in time. Social exclusion may persist even if barriers to access are reduced for part of the population, and exemption mechanisms for the poorest or sliding scales for premiums that might be a remedy are not easy to implement (Musau 1999, Jakab et al. 2001). After or before the introduction of health insurance, rising incomes, that may be brought about by development projects, can be necessary to attract members and realize the potential benefits of the schemes.

The prevailing concepts of illness and risk are relevant to the decision of households whether to purchase health insurance or not. If people see illness as a somewhat random event that can hit anyone, they are surely more willing to purchase insurance than if they perceive it as punishment for misbehaviour by magic powers. Cultural habits in dealing with the risk of illness can influence the demand for insurance. In Senegal this has been frequently reported as one obstacle to buy health insurance as people were used to put money aside for unpredictable events like marriages and funerals, but they believed that saving money for eventual health care costs meant “wishing oneself the disease”. If solidarity is strong, people will not worry so much if the benefits of the premiums they paid will accrue to themselves or other community members. For example, members of a CBHI scheme in Senegal expressed the opinion that if they would not need health care themselves, at least they had done something good for the community by contributing to the insurance fund. The degree of solidarity and mutual trust is probably higher in homogeneous, close-knit communities than in scattered and diverse populations comprising people of different ethnic origin, religion and culture.

In any case, initiators and managers of health insurance schemes should pay more attention to consumer satisfaction and to people’s preferences and perceptions, because these are crucial factors for successful implementation of CBHI.

5 Conclusions and outlook

In most industrial and many middle-income countries, insurance has turned out to be a useful financial tool in the health sector. In Africa, wage-based social insurance and private health insurance have had very limited impact because they failed to cover informal sector workers and the rural self-employed, who constitute the majority of African populations. The debate about the potential of community-based health insurance to improve access to health care and social protection is still ongoing, while more and more schemes have been emerging during the nineties in rural and urban Sub-Saharan Africa. Though health insurance is an exogenous concept largely inspired by European history and occidental values, this does in no way preclude its appropriation by local populations. Given the unique ethnic, lingual and cultural diversity within African nations, the CBHI approach may be particularly promising for this continent because it allows adaptation to local conditions. On the other hand, the running of a CBHI scheme requires a – not yet clearly defined - minimum of management capacity at the local level as well as rational organisation of health
care provisions. These prerequisites seem to be lacking in many instances in Sub-Saharan Africa. The actual implementation of CBHI schemes has had mixed results so far, with success and viability largely depending on design and management of the scheme, community participation, regulations at the level of the health care provider, quality of services and on the socio-economic and cultural context. As experience gained with CBHI has become the focus of several research initiatives and the lessons learned are offered to people running the schemes or intending to start new ones, the performance of CBHI will hopefully improve over time. The future will show if there are ways to overcome common failings of CBHI which have been recognised in many schemes: limited participation, low cost recovery rates and the problems of including the poorest members of society. Small-scale health insurance can supplement other sources of finance in low-income countries rather than being a substitute for them. CBHI is no “magic bullet” to improve health care systems, though it can contribute to improve the effectiveness, quality and equity in health care provision in developing countries. Further theoretical and empirical research is necessary, in order to determine the optimum size of the schemes, to explore possibilities of re-insurance and group insurance and to develop appropriate indicators to measure cost and benefits of such institutional innovations. These indicators should also be able to capture important potential long term effects of health insurance schemes such as gains in labour productivity and improvement in health outcomes.
References


