WORKING PAPER NO. 161

HEALTH INSURANCE FOR THE POOR IN INDIA:
AN ANALYTICAL STUDY

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JUNE 2005

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Content

Foreword

In comparison to phenomenon of micro-credit which started in a big way in India in the 90s, micro-insurance is a very recent phenomenon. Micro-insurance, that basically refers to insurance for the low income people, is picking up in India. A strong interest in the development of micro-insurance in India comes from three different quarters. One is the growing evidence of a strong positive link between health security and poverty reduction; accordingly those involved in poverty alleviation are looking for way to address healthcare needs of the poor. Two, hard constraint on public budget is making the health financing specialists explore alternative financing mechanisms such as insurance, user charges, revolving funds etc. Third, the imposition of social and rural obligations by the insurance regulator in post-reform phase of the Indian insurance market is necessitating insurance companies to develop products for the low-income segment of the market. The confluence of all three forces is leading to the development of micro-insurance India.

Also, micro-insurance is a natural extension of micro-credit operations. Accordingly, microfinance agencies and organization are increasingly showing interest in micro-insurance, including micro health insurance.

This analytical study charts the early development of micro-insurance in the country, with a focus on health insurance, mainly with the view to bring out certain issues that come up in the design of micro health insurance. The findings of this research should be of interest to all the stakeholders.

This research was funded by South Asia Network of Economic Research Institutes (SANEI).

Arvind Virmani
Director & Chief Executive
ICRIER

June 2005

1   Introduction

Although the type of risks faced by the poor such as that of death, illness, accident, old age etc. are no different from those faced by others, the poor are more vulnerable to such risks. Given the economic circumstance of the poor, these risks have a special significance in their lives. These risks prevent them from breaking the vicious circle of poverty. Any poverty alleviation strategy must, therefore, enhance the ability of the poor to deal with risks (Holzmann and Jorgensen 2000, Siegel et al. 2001). Insurance is one of the risk management strategies. In the past insurance as a prepaid risk managing instrument was never considered an option for the poor. For one, the poor were considered too poor to be able to pay for insurance, and for other, they were considered uninsurable, given the variety of risks the poor face. However, recent developments in India, as elsewhere, have shown that not only can the poor contribute towards their insurance but also that they are insurable as the risks they face are predictable and there are cost-effective ways of extending insurance to them.

Micro insurance, the term that refers to insurance to the poor, is slowly picking up in India.[1] Of the 51 operational microinsurance schemes in India (enlisted in the recent ILO inventory (2004)), 25 schemes came up during the last 4 years alone. Historically, a few microinsurance schemes (around 8 schemes have operated for 7 years or more) were initiated either by the non-governmental organisations (NGOs) due to the felt need of the communities in which these organisations were involved or by the trust hospitals. However, the recent momentum behind these schemes is partly due to the development of microfinance activity in the country and partly in response to the regulatory requirement that makes it mandatory for all insurance companies (whether public or private and whether in life or non-life segment) to extend their activities to rural and well-identified social sector

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[1]   Microinsurance is relatively a new term used to refer to insurance services that are specifically aimed at the poor, delivered through a nodal agency (as in the case of micro credit), and that involve modest premium and coverage amount. Microinsurance is also referred to as community based insurance. An ILO Report (2000) defines microinsurance schemes as schemes set up by self-employed and informal economy workers to meet their priority social protection needs. The mechanism used in these schemes is generally the provision of mutual support through the pooling of resources based on the principles of insurance."

in the country (IRDA 2000). As a result, increasingly microfinance institutions (MFIs) and NGOs are negotiating microinsurance schemes with the for-profit insurers for the purchase of customized group insurance policies. For MFIs, integrating insurance with their credit and savings activities makes logical sense as it helps them reap scale economies in financial management, provides them with a captive market, and enables them to use their existing network and distribution channels to sell insurance. Indeed, most insurance schemes (66%) are linked with micro finance services provided by specialised institutions (16 schemes) or non-specialised organisations (15 schemes). Health care providers implement only 12% of the schemes.

Although the microinsurance schemes in India cover a variety of risks, life and health are the two most popular risks for which insurance is demanded. Fifty nine percent of microinsurance schemes operational in India provide for life insurance, and 57 percent of the schemes provide for health insurance.[2] In SEWA's[3] experience health insurance tops the list of risks for which the poor need insurance.[4]

Few studies have tried to measure the effectiveness of health schemes in India. While microinsurance schemes do mobilise significant amount by way of premium from members, improve their access to health services, and spread health awareness, these schemes suffer from certain weakness, for example, they depend on external funding, exclude the poorest of the poor, and often suffer from poor design (Ranson 2004). Although these schemes cover only around 2.6 million beneficiaries their potential is viewed to be considerable (ILO 2003).

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[2] Many MFIs and NGOs are in the process of introducing health insurance.

[3] SEWA is a labour union of informal economy women workers based in Ahmedabad city of Gujarat. It was started by Ela Bhatt. Its operations now run in other states such as Madhya Pradesh, Delhi, Bihar, Kerala and Gujarat.

[4] In comparison to life insurance which is a fairly straightforward business (as death is once in a lifetime event and proving it is much easier), health insurance is much more complicated. This could perhaps be the reason why we observe higher number of life insurance than health insurance schemes.

The need for health insurance for the poor has arisen because illness is found to be one of the important causes of their impoverishment. In the event of illness the poor (for whom wage income is the predominant source) not only forgo their income but have to dissave, borrow or run down their assets for meeting hospitalization costs. According to a World Bank study (by Peters et al. 2002), about one-fourth of hospitalised Indians fall below the poverty line as a result of their hospital stays. Similarly, more than 40 percent of hospitalised patients take loans or sell assets to pay for hospitalisation. Similarly, the baseline survey carried out by the Centre for Population Dynamics (CPD) in 2 different districts of Karnataka corroborated the findings of the World Bank study. In particular, CPD found that people in those 2 districts faced significant financial barriers in seeking medical care as loans constituted the single largest source for meeting costs of illness and hospitalization, followed by sale of livestock (Karuna Trust 2003).[5] Such high percentage is also noted by some MFIs in the utilization pattern of loans advanced by them (see SHEPERD for example[6]).

Although, in principal, government provides for free primary and secondary health care services to the poor, in practice the quality of primary health services is far from satisfactory, and that secondary services are not easily accessible.[7] As a result the poor end up spending significant percentage of their income for meeting their health care needs. If the poor must pay to get quality health care services, then there is a case for strengthening their demand so as to enable them to buy such services. Income generation activities for the poor, of course, help in strengthening their demand for health care. But even at their current

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[5]   Around 52 percent of cost of illness and 43 percent of hospitalization expenses were met through loans. Similarly, around 13 percent of illness cost and 17 percent of hospitalization expenses were met through sale of livestock.

[6]   SHEPHERD found out that 40 per cent of its internal loans have been availed by their borrowers for curative purposes.

[7]   Public spending accounts for only about 0.9 percent of GDP which is highly inadequate. Moreover, even this limited public spending is not just on primary care, the benefit of which accrues mostly to the poor, but also on secondary and tertiary care, which also benefit the already well off sections of society. Furthermore, much of the private health spending is out-of-pocket expenditure and does not take the form of prepaid risk pooling arrangement. The burden of in case of out-of-pocket expenditure falls disproportionately on the poor.

income levels, health insurance by spreading the cost of illness among all the insured members can help in reducing the financial burden of treatment of those who fall ill, and thereby, helps in building demand.

Health insurance for the poor is different from the health insurance in general in at least 4 ways. *First*, in case of a poor individual, the size or the extent of insurance coverage is not a choice variable. Individuals cannot choose coverage level at a given price or decide on the risks against which to buy insurance, as is generally the case with health insurance. The poor are offered an insurance package that includes price, benefits and defines the method of paying premium and settling claims. All that they decide is whether or not to join the scheme. In other words, insurance package only influences the purchase decision i.e., whether or not to buy (standard) insurance package but not how much coverage to buy or what risks to include. Price is based on community rating and not on individual rating. Health insurance in case of the poor is generally a group contract mediated through or managed by a nodal agency.

Second, in case of health insurance for the poor, some level of subsidy or external funding is necessary for ensuring sustainability of schemes. According to the ILO inventory, nearly 50 percent of the schemes (i.e., 25 schemes) received a financial assistance to initiate their activities.[8] A review of 10 health insurance schemes for the poor in India also confirms this point (Ranson 2004). This gives rise to a number of issues such as: what level of subsidy, in what form, and, to what agency?

Third, health insurance does not remove all financial barriers to access health care. Often there are many indirect costs such as wage loss, transportation costs, incidental costs during hospital stay and so forth. This is not to suggest that people who are not poor do not have to bear these costs. What distinguishes the poor from non-poor is that these costs often

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[8]   Besides financial assistance, the schemes also need some technical assistance. In the ILO inventory, 20 schemes benefited from some external technical assistance.

prevent the poor from seeking medical care. So, a careful design of scheme must try to minimise these other financial as well as non-financial barriers. Indeed, a few health insurance schemes explicitly provide for wage loss to enable the poor to seek treatment. Moreover, mechanism of premium collection and claim settlement itself can act as a barrier to join a scheme. A flexible method of collecting premium is needed for people who have low and fluctuating income. Similarly, prompt/direct claims settlement in case of the poor who lack credit facility assumes special significance in case of the poor.

Fourth, designing health insurance system involves strengthening health care provision as well. Providing health insurance is meaningless if the health facility is weak. A weak facility dissuades individuals from joining the scheme and this also has a bearing on cost of illness. Provision of health care of reasonable quality cannot be assumed when initiating health insurance for the poor. Often, good quality services are not available within reasonable distance. So initiating health insurance in case of the poor also involves strengthening the supply side.

To the extent health insurance helps in removing financial barrier to seeking health care, it is desirable. However, providing insurance to the poor can be prohibitively costly. Neither government provided nor market mediated insurance is appropriate way of providing insurance to the poor as both these are too costly. An institutional innovation that makes delivery of insurance cost-effective is the only way of extending insurance to the poor. This innovation lies in finding an intermediate agency that can organise the poor and perform some (or all) of the activities normally carried out by an insurance company.

The development of microinsurance in India has shown how insurance can be extended to the poor in India in a cost-effective way. But the mechanism for providing insurance is different from the usual formal, market-based insurance. In particular, while principle of advance payment of premium for covering risks that may arise in future remains the same, many of the activities normally performed by an insurance provider are

undertaken by a nodal agency whose role is deemed essential in extending the reach of insurance to the poor as it able to perform variety of activities in cost-effective way. This way micro insurance combines positive features of both formal insurance (by organising it scientifically) as well as informal insurance (by using local information and resources that helps in designing appropriate scheme at reduced costs). In this paper we bring out the role of nodal agency in providing insurance to the poor. Besides, we identify and examine important conceptual issues that come up in different types of microinsurance arrangements emerging in the country. Analysis of these issues is needed for better understanding of these schemes, and this should help in their design as well as in devising an appropriate government policy.

The paper is organised as follow: in the next section we highlight the role of nodal agency in extending insurance to the poor; in section 3, besides highlighting the different microinsurance arrangements in the country, we identify and study various conceptual issues that come up under alternate microinsurance arrangements emerging in the country; in section 4 we bring out the role of public policy in developing microinsurance in the country; and section 5 concludes the paper.

2   Role of nodal agency

Organising the poor, also referred to as social intermediation, is essential not just for providing insurance but for carrying out any kind of development activity designed for the poor. An intermediate agency, or a nodal agency, that works for the upliftment of the poor performs this important function. In the absence of a nodal agency, social organisation of the poor can be quite costly. A nodal agency could be any of the civil society associations/organizations such as community based organisations, women's groups, informal economy trade unions, NGOs, micro finance institutions, micro-entrepreneurs associations and so forth. That a majority of microinsurance schemes (76 percent) in the ILO inventory are developed in the four southern states of India should not come as a surprise. The southern states are known for their better social organisation. A nodal agency

generally has an intimate knowledge of the needs and priorities of the community, in which they work and also enjoys the trust of the local people. This local knowledge is essential in designing appropriate insurance scheme as well as appropriate delivery mechanism. In addition, a nodal agency can mobilize external funding.

In the context of health insurance, a nodal agency performs several functions typically carried out by an insurance company. The presence of a nodal agency results in (i) lowering of transaction costs (ii) designing a scheme suited to the community needs, and (iii) influencing the supply of health care. We expand on each of these below.

The strength of microinsurance lies in lowering transaction costs. Popularising insurance among low-income people, who are also not well educated and informed, is often not an easy task. Conveying the idea, canvassing it, collecting premium, verifying and reimbursing claims often takes up significant portion of the premium costs. In case of formal insurance contracts, these costs are well in excess of 15-20 percent of premium. In case of insurance to the poor, these costs as a percentage of premium are likely to be higher because of small valued transactions. A nodal agency having a team of committed social workers is able to perform the functions in a cost-effective way. At times, scheme members themselves are entrusted with some of the functions in running of a scheme.[9] Besides, a nodal agency also plays a crucial role in design of insurance scheme.

A careful design of schemes depending on characteristics of the target community helps in removing many other financial and non-financial barriers. Additionally, the problems of adverse selection and moral hazard that arise due to informational asymmetries too can be mitigated through careful design and implementation of the scheme by making use of local knowledge that is readily available among people living in close communities. In a few existing schemes in India, a nodal agency provides credit that enables the members

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[9] Even social workers who spread insurance awareness need to be trained. Expanding microinsurance requires building capacities of the nodal agencies as well.

of local community to pay premium and join insurance scheme. In some cases, the premium is collected in "soft form" such as in the form of labour service, agricultural produce and/or small amounts collected more frequently.

Also, presence of a nodal agency helps in influencing provision of health services and negotiating the prices and other conditions with the health providers. By this reckoning, standard policies that are not tailored to the needs of the community cannot be hoped to be very successful. Jan Arogya and Universal Health Insurance are the standard health insurance schemes of the public insurers for the poor. These schemes do not seek to achieve the benefits typically associated with the involvement of nodal agencies, and also such schemes more prone to abuse.

3   Types of Microinsurance Arrangements

Depending on the nature of functions performed by a nodal agency, one could categorise all microinsurance schemes into three types (Ranson 2004). Type I scheme where a nodal agency is an intermediary between a formal insurance provider and the target community (SEWA in Ahmedabad, ACCORD in Nilgiris are good examples of this type of schemes). Almost all MFIs and also some NGOs perform the role of an intermediary.[10] Type II scheme where a Community Based Organisation (CBO) or an NGO manages the scheme in-house with an arrangement with a health provider (for example Tribhuvandas Foundation in Gujarat, Yeshwani in Karnataka). Type III scheme where the health care provider itself initiates and runs an insurance scheme (as in case of Sewagram Hospital in

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[10]   Around 33 percent of the schemes are initiated by microfinance organisations (MFIs), 27 percent by NGOs and 20 percent of CBO, and 12 percent by health providers, and remaining by others. Sixty-nine percent of schemes have already developed partnerships with insurance companies (42 percent with public insurance companies and 27 percent with private companies).

Maharashtra, Voluntary Health Services (VHS) in Chennai). [11] All these forms currently exist in the country but only in small pockets.[12]

A number of conceptual issues come up in these different types of microinsurance schemes. Some of the important ones relate to (i) transaction costs (ii) membership size (or the size of risk pool) (iii) in-patient and out-patient care (iv) informational problems (v) unit of insurance (vi) maternity insurance, and (vii) benefit on provision side.

But not all these issues are equally prominent in all types of microinsurance. For example, size of membership (or size of risk pool) is likely to be a much more significant issue in a scheme managed in-house (Type II scheme) than when it is bought from an insurance company. Similarly, while high drop-out rate is an important issue in the intermediary type of (Type I) scheme, it is unlikely to be the case where scheme is managed in-house. This is because the solidarity is likely to be greater in a scheme that is managed in-house than when it is bought from a formal insurer. Similarly, including outpatient care is not an issue in the provider type (Type III) scheme, whereas it is so in the intermediate (Type I) scheme. In this section we discuss selected issues that are likely to be important in each type of microinsurance. The table below gives a snapshot view of selected conceptual issues that come up in alternate microinsurance arrangements in India:

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[11]   A review of 10 community based health insurance schemes in India identifies schemes of these three types. For review of these schemes see Ranson 2004.

[12]   Besides these types, there is another type of health insurance scheme for the poor but this scheme cannot strictly be considered as microinsurance scheme. This is the Jan Arogya policy offered by the non-life public insurance companies. This policy is like any other market based contract, except the fact that the terms of the contract have been decided by the government since the contract is meant for the low-income people. A similar scheme, called universal health insurance for the poor (UHI), has been launched recently, and it also fits into this category. Even though the scheme seeks to involve NGOs in representing a group, the schemes do not really try to exploit the potential of nodal agencies.

Table 1 : Conceptual Issues in Alternate Microinsurance Arrangements in India

Nature of issues (Examples)	NGO is an Intermediary (SEWA/ ACCORD) (Type I)	NGO is a Manager (Tribhuvandas Foundation) (Type II)	NGO is a Provider (Sewagram/ VHS) (Type III)	Standard Health Insurance Schemes[13] (Jan Arogya/ UHI)
(i) Transaction costs	Low-medium	Low	Low	Medium
(ii) Membership Size (size of risk pool)	Not an issue	Is an important issue	Is an important issue	Not an issue
(iii) Inpatient/ Outpatient Care	Is an issue	Is an issue	Is NOT an issue	Is an issue
(iv) Benefit on provision side	Negligible	Low	Significant	Low
(v) Loss/ Risk Reduction	Negligible	Significant	Significant	Negligible
(vi)Informational Problems	Is an issue	May be an issue	Not an issue	Is an issue
(vii) Maternity Benefit	Is an issue	Not an issue	Not an issue	Is an issue

Source: Own Compilation

(i) Transaction Costs: When providing insurance to the low-income people or those in a low resource context, transaction costs become crucial in all types of insurance arrangements. One of the strengths of microinsurance scheme is that such costs can be contained. The magnitude of these costs can make the whole difference between being able or not being able to afford insurance.

The effect of high transaction costs is that it tends to make insurance scheme unattractive, and this shows up in fewer members joining an insurance scheme. Of course, lower membership could be due to several reasons, high transaction costs being just one of these. Indeed low membership is a problem in many existing schemes. SEWA, for example, has over 5 lakh members and only around 1 lakh members (i.e., around 20 percent) are part

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[13]   The fourth column does not represent a microinsurance scheme. It is mentioned just for the sake of comparison.

of its insurance scheme. Similarly, FWWB has an outreach to 8,00,000 members but only 17.9 percent of the members currently participate in microinsurance against any kind of risk.[14] Still, a very small percent of the insured members FWWB have health insurance. Ranson (2004) reports inverse relationship between the size of target community and the subscription rate i.e., smaller target communities tend to have higher subscription rate.

We demonstrate below how high transaction costs might discourage people from joining insurance scheme even when it benefits them, and in such situation why people might prefer savings to buying insurance.

Consider a two-period model in which a typical risk averse individual faces no uncertainty in the first period and therefore has a fixed given income Y. In the second period, however, the individual (or household) has random income. For simplicity we assume that there are only two possible states of nature: a *good state* in which the individual income is *y* and a *bad state* in which his income is Y-L. The bad state in the current context is the state of the individual falling sick.[15] The probability of the bad state is denoted by *p*. The risk averse behaviour is captured by the restriction on the utility function, *U*, that is by its strict concavity (i.e., *U'>0 and U''<0*). Expected utility of the individual in the absence of insurance is given as:

EU=U(Y)+ (1-p)U(Y)+pU(Y-L)

For simplicity, the discount factor is assumed to be 1 (unity).[16]

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[14]   FWWB (Friends of Women World Banking) has a network of 96 partner organisations that provides loans to its partner organisation who inturn provide micro-credit to the low-income people. Besides providing credit, the network is moving into providing other financial services such as savings and insurance.

[15]   In case of illness, the individual not only suffers income loss but also loss on account of having to bear cost of illness (i.e., of medicines etc.). In the model we do not distinguish between these two costs and treat the entire loss to be insurable.

[16]   This is a simplifying assumption that implies that the future is as much dearer to the individual as is the present.

Supposing the insurance contract available to the agent is: buy any amount of coverage in period 1 at actuarially fair price p[17], and get the coverage amount reimbursed in period 2 if the loss state shows up.

Given this contract, if the agent faces no borrowing constraint, he would buy full insurance. From the standard result on insurance literature, at actuarially fair price, the utility maximising individual would demand full insurance coverage (see Mas-Colell et al. 1995, pp. 187-188). His expected utility would be:

$U(Y-p\,L+B) + U(Y-B),$

where *B* denotes borrowings.

The optimal borrowing B^* would equalise agent's utility in the two periods. This happens at $B^*=pL/2$. Substituting this value of B^* would give agent's utility after he has purchased insurance: $2U(Y-pL/2).$

The agent's behaviour may depart from above if insurance premium is actuarially unfair and/or the agent faces borrowing constraint. To highlight each of these aspects we consider two situations: (a) when price of insurance is actuarially unfair, but the agent has access to credit; (b) when the price of insurance is actuarially fair, but the agent doesn't have access to credit. In both these cases, the agent may not buy insurance. We consider each of these situations below.

(a) When price of insurance is actuarially unfair but the agent has access to credit: Normally, in this situation if the agent has an option to choose coverage level, he may still

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[17] Actuarially fair price is the price at which insurance company selling insurance makes zero-expected profits. This condition characterises competitive insurance market. In the absence of zero transaction costs, the actuarially fair price is the same as probability of bad state showing up.

buy insurance but the coverage would be partial. In case of micro-insurance there is additional complication which is that the agent may not get to choose the coverage level; he is offered a fixed insurance contract and his decision variable is whether or not to buy this *given* contract.

In such situation too, the agent would buy insurance (if affordability issue does not kicks in) if the price is actuarially fair (i.e., when $P = p L$) but if the price of insurance is unfair the individual may or may not buy insurance. There are two possibilities here: if the price is very high, the agent will be better off not buying insurance at all; and, if the price of insurance is not very high, but is still actuarially unfair, the agent may not buy insurance, and may instead prefer to self-insure (i.e., set aside some savings for future) even when buying insurance makes him better off. We demonstrate this below:

Let *P'* denote actuarially unfair price. If buying insurance yields higher utility than not buying insurance the following condition would hold.

$$[U(Y)+ (1-p)U(Y)+pU(Y-L)] < [U(Y-P')+ U(Y)]$$

The term on the left-hand side of the inequality is agent's expected utility in the absence of insurance whereas the term on the right-hand side denotes utility after buying insurance. If the agent has access to credit market, the agent can do better by equalising his income in the two periods i.e.,

$$U(Y-P') + U(Y) < U(Y-P'+B) + U(Y-B),$$ where *B* denotes (interest-free) borrowings

As in the above, the optimal borrowing would be *P'/2*.

Given this, the level of *P* may be such that it may be better for the agent to not buy insurance and save (or self-insure) instead i.e.,

$$U(Y-P'+B)+ U(Y-B) < U(Y-S)+ (1-p)U(Y+S)+p\ U(Y-L+S)$$

In other words, even if buying insurance is utility enhancing for the agent, the agent may be better off self-insuring i.e., by setting aside some savings rather than buying insurance. And, if the agent doesn't have easy access to credit which is more likely to be true in the context of poor, there is greater likelihood of the above condition (where agent prefers saving instead of buying insurance) holding true. A simple numerical example can demonstrate such a plausible situation.

Supposing: $U(Y) = \sqrt{100}$, L=36, p= 0.5.

In the absence of insurance the expected utility of the agent is: $U(Y)+ (1-p)U(Y)+pU(Y-L) = \sqrt{100} + (0.5) \sqrt{100} + (0.5) \sqrt{(100-36)} = 10 + (0.5)\ 10 + (0.5)\ 8 = 19$.

If insurance is available to the agent at actuarially fair price his utility would be: $U(Y) + U(Y-pL) = \sqrt{100} + \sqrt{(100 -(0.5)\ 36)} = 10 + 9.0554 = 19.0554$. If the agent could borrow against his future income, his utility would increase to: 19.07878 (when he is able to equalise income in both periods).

Now, suppose that insurance is available to the agent but at unfair price resulting in premium of 18.9. The utility he gets from buying insurance at this premium is: $U(Y) + U(Y-18.9) = 10 + 9.0056 = 19.0056$. If he is allowed to borrow against his future income, his utility would be $U(Y-9.45) + U(Y-9.45) = 9.5157+9.5157= 19.03155$. Even when the agent is better off buying insurance, we show below that the agent may still not buy insurance simply because self-insurance is more attractive option.

Instead of buying insurance, if this individual were to save some money in the first period to be used for second period, his utility would be: $U(Y-S)+ (1-p)U(Y+S)+p\ U(Y-$

L+S). It is easy to check that optimal savings would be 10.4 (the one that equalises marginal utilities in the two periods). At this level of saving his utility is : $\sqrt{(100-10.4)}$ + (0.5) $\sqrt{(100+10.4)}$ + (0.5) $\sqrt{(100-36+10.4)}$ = 9.4657+(0.5) 10.507 + (0.5) 8.6255 = 19. 03207 (> 19.03155).

If, in addition, the agent doesn't have borrowing option which is likely to be true in case of the poor, the difference in the utilities in the two cases (of buying insurance (19.0056) and saving (19.03207)) will be significant, thereby influencing the membership of any insurance program.

The above case is outlined to highlight the role of transaction costs. [18] When the coverage level is fixed and not in agent's control, the presence of transaction costs reduces the decision to buy or not buy the package (and not how much insurance to buy). The presence of transaction costs can make buying an insurance package unattractive for the agent and the agent may prefer other risk management strategies such as savings to insurance (for a diagrammatic exposition of this issue see the Appendix). Even if transaction costs are partly subsidised, agent may still not buy insurance and may prefer to save instead. But the purchase decision depends not just on the price of insurance but also on whether or not the poor has access to credit. We explain this below:

(b) When price of insurance is actuarially fair but the agent doesn't have access to credit: In this situation too the agent may not buy insurance if he is already close to subsistence.

We continue with the above assumptions about agent's behaviour. However, let his second period income now be $Y+z$ in the good state and $Y-z$ in the bad state. The bad state

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[18]   Note also that transaction costs need not always take the form of higher premium. It could take non-financial forms as well. For example, if there is difficulty in getting claims reimbursed, then this may actually tilt the balance in favour of savings that can be re-called with greater ease rather than getting a claim reimbursed.

in the current context is the state of the individual falling sick. Furthermore, we now assign specific value to the probability. Let the probability of the bad state, denoted as *p*, be *0.5*.

$$EU=U(Y)+ 1/2 \{U(Y-z)+U(Y+z)\}$$

Notice that the income loss suffered by the individual in period 2 should the bad state show up, is *2z*, and we continue to assume the discount factor to be 1 (unity).[19]

Let's first consider the case where the individual faces no borrowing constraint. As noted above at actuarially fair price and with no borrowing constraint the agent would buy insurance. Agent's utility after buying insurance and availing credit would be:

$$EU=U(Y-z+B)+U(Y+z-B)\}$$

where, *B* represents borrowings by the individual. Since we have assumed no borrowings constraint, the optimal borrowing is one that equalises income in the two periods. This occurs when *B*=z*. Substituting B* in the above condition equation yields *EU*=2U(Y).*

Since the paper deals specifically with the demand for insurance by the poor, we characterise them by the assumption that they are at (or close to) their subsistence level in the current period (i.e., period 1), and face credit constraint which is a well known fact about the poor in the developing world. An important implication of this assumption is that the poor cannot spare much, if at all, from their current income for insuring their future. Let *C* denote the minimum consumption needed by the individual the keep him at the subsistence level. In the above construct, let the relationship between C, *Y* and *z* be defined by the condition, *Y-z < C= Y*. What this condition implies is that the individual is just able

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[19]   This is a simplifying assumption that implies that the future is as much dearer to the individual as is the present.

to meet his minimum consumption (defined by *C*) in period 1. In period 2, the individual runs the risk of falling below his subsistence level (or the poverty line) in case the bad state shows up. In this case, if the individual cannot borrow at all, he will not demand any insurance. However, if the individual could borrow, he would demand insurance, yielding utility *EU*=2U(Y).* By buying insurance the individual is able to keep himself afloat the poverty line (i.e., able to meet minimum consumption needs in both periods).[20]

This is the situation in which people are aware of the benefits of purchasing insurance but cannot set aside any money from their current income for this purpose. Faced with this situation, if cost of borrowing is not so high as to close the borrowing option, the agent would borrow to pay premium. In reality, borrowing for insurance need not necessarily take the form of actually taking credit at the prevailing interest rate. In fact, many schemes are so designed as to take account of this fact. For example, flexible premium option is one of the ways of addressing this issue. Creating a common pool of funds that can be used to give soft loans to group members is another way. Although the literature on microinsurance is thin, there is some evidence already available to this effect. In fact, many micro-finance organisations dealing with savings and credit have been successful in introducing and running micro-insurance schemes.[21]
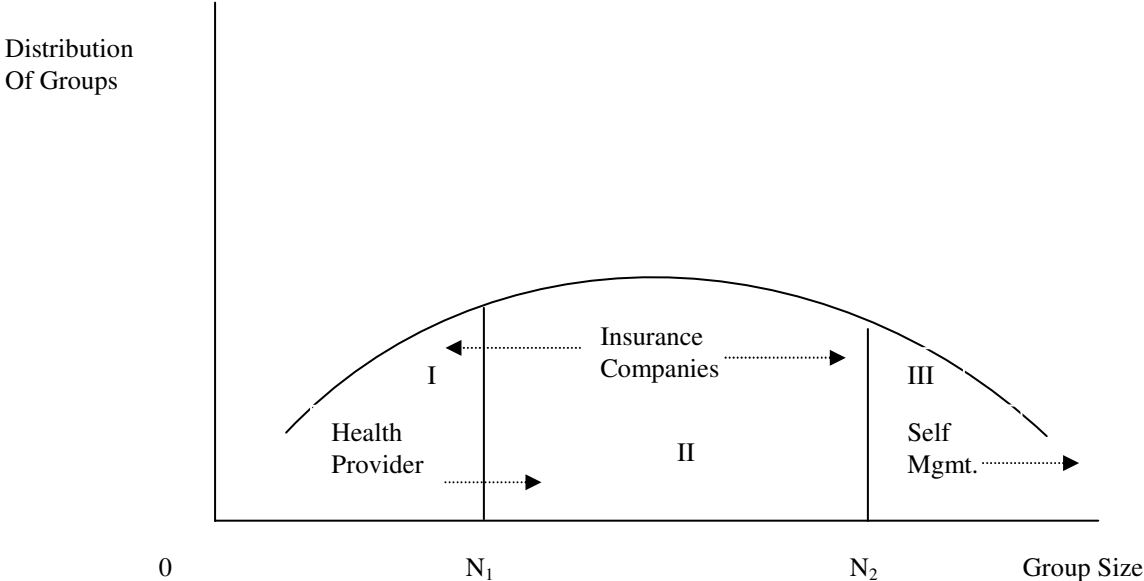
(ii) Membership Size and Risk Diversification: In microinsruance schemes in India, the size of membership varies widely from less than one thousand to more than 50,000 members (ILO 2003). The size of membership is crucial for diversifying health risk by enlarging the size of risk pool. This issue becomes important when a scheme is managed in-house by a nodal agency (Type II scheme). A large group size tends to make the scheme viable and sustainable. Given the size of membership, if the actual loss significantly exceeds the average loss, it can put the scheme in trouble as the collection by way of premium would

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[20] For a case where agent is free to decide on the coverage level is explored in Ahuja and Jütting (2004).

[21] The ILO Compendium of micro insurance schemes in India shows that about one-third of the insurance schemes are initiated by micro finance organisations.

fall short of the claims thereby subjecting the scheme to financial stress. If this stress is large enough the scheme may break down. Where the scheme is managed by a health care provider size of membership beyond a decent number defined by the capacity of the health facility is not that critical. In case a scheme is bought from a formal insurance provider the size of membership is not an issue at all.

Based on the need to diversify risk and the transaction costs involved, one can map the appropriateness of type of scheme to a group size. This mapping is shown in the figure below.

The figure above shows the distribution of groups according to their size. The shape of the distribution is immaterial. What is of significance here is the fact that different types of insurance arrangements are appropriate for the groups of different sizes. Depending on their size, we divide groups into three broad categories: small (represented by zone I), medium (zone II) and large (zone III). When a group is very large, say greater than N_2 (lying in zone III) it is best if the group members self-insure themselves or have an in-house insurance program. A recent health insurance scheme called Yeshwani, started in Karnataka, has membership of over one (1) million individuals. The scheme is managed in-

house. Although this scheme has barely one year old, the early figures suggest that the scheme may not have difficulty break-even.

On the other extreme, if the size of a group is very small, then running insurance program in-house would be least effective. Even buying insurance from an insurance company would not be cost-effective. In the extreme case, it would tantamount to selling insurance to an individual. Writing separate contract for each insured individual is costly for the low-income buyers. Hence the idea of writing a single contract for a group of persons.

In cases where group is small but covers a large percentage of population of a region, an insurance scheme developed by a health care provider it most appropriate. For example, for sparsely populated rural areas where people live in cluster of villages a healthcare provider scheme would be more suited. Alternatively, smaller groups can federate themselves into a bigger group and then have a contract from an insurance company. For smaller groups of 10 to 20 members, schemes that are bought from an insurance company would be expensive due to high transaction costs. In schemes managed by healthcare providers there are limits to the membership as its reach is limited only to the people within certain geographical limits. For groups of medium size, it is preferable to buy insurance from an insurance company. That way, it can pass on the risk to an insurance company at an affordable price.

An insurance scheme with small number of members managed in-house can at best provide for outpatient care. But for inpatient care, it has to be with a formal insurance provider if it is to be successful. Membership size also has effect on reaping scale economies which could be due to lowering of transaction costs, getting a better deal from a health care provider and/or from an insurance provider. The ultimate effect of this is in lowering of premium. We demonstrate below an important aspect that must be kept in mind

while designing an in-house scheme that can, to some extent, reduce the need for risk diversification where membership is small.

Financial sustainability is an important issue in a scheme managed in-house as well in the provider type scheme. There are at least three ways of ensuring financial sustainability: *one* obvious way is to increase the size of pool, *second* way is to reinsure the risk, and the *third* way which is not recognised enough is to bundle the insured risks in such a way as to make aggregate loss more certain. The first two ways are well-understood. It is the third point which deals with bringing maximum certainty into aggregate loss that needs elaboration. If, for example two risks are negatively correlated, both these risks could be covered by the scheme. So the starting point of any micro-insurance should be to cover those risks that add stability into aggregate losses and to increase the size of pool. Later, as reinsurance facility becomes available, other risks can be added. We elaborate on this below.

Providing insurance in a society would be much less complicated if the aggregate loss, sum of individual losses, were fixed and known and the only uncertainty is with respect to the individuals experiencing this loss. In a society of N identical individuals, if M individuals were to experience loss every period, then each member would contribute premium just enough to cover the aggregate loss, which is the sum of loss to M individuals. Premium collection in any period would match disbursements on account of claims. Each period would be independent of next or the previous period and this exercise could be repeated period after period. In such a society there would be no scope for risk diversification or reinsurance. In other words, such a society will not do any better by joining hands with another identical society. The risk is fully contained in the society and the best it can do is to spread the risk among all its members through insurance. Assuming the members to be risk averse, each member would be better off as he or she would be able to convert uncertain income prospects into certain prospects thus improving his or her welfare.

To illustrate with example, supposing there are two individuals in a society, one of whom incurs loss L for sure. But which of the two individuals incur this loss is uncertain. In this example the loss probability facing each individual is 0.5. In the absence of any deal between the two individuals with respect handling of the risk, expected utility of each individual would be: *0.5 U(Y)+0.5 U(Y-L)* (we are assuming single period model here). However, both the individuals can be better off if they eliminate this uncertainty by deciding to share the loss equally. In that case, each agent's utility would be: *U(Y-L/2).*

Note that in the above example, *L* is fixed and therefore there is no scope for further risk diversification by joining hands with identical 2-individual society. The scope for risk diversification arises when the aggregate loss itself is not certain. Continuing with the same example, supposing that in a 2-individual society, each individual were to incur a loss of *L* with probability 0.5. The difference between this society and the previous 2-individual society is that in this society there are 4 possible states: none of them incur the loss, either of them incur the loss, both of them incur the loss. The individuals would be better off joining hands but they can now share loss only when one of them incur loss. In situations where none of them incur the loss or both of them incur loss, there can be no sharing of risk. In this case, expected utility of each agent would be:

Society I : $EU = (1-p)^2 \ U(Y) + 2(1-p) \ p \ U(Y-L/2) + p^2 \ U(Y-L)$

$$\underbrace{}_{1} \qquad \underbrace{}_{2} \qquad \underbrace{}_{3}$$

Society II : $EU = (1-p)^2 \ U(Y) + 2(1-p) \ p \ U(Y-L/2) + p^2 \ U(Y-L)$

$$\underbrace{}_{1} \qquad \underbrace{}_{2} \qquad \underbrace{}_{3}$$

where, numbers 1,2 and 3 refer to different states of nature.

When the loss itself is uncertain, the wealth of the society is also uncertain. The society would definitely be better off by joining hands with another identical society and

diversify risk. Both the societies can then cover for the possibility where both individuals in one of the two societies incur loss (i.e., by sharing risk in state (1,3) or (3,1)). The loss can then be shared between the two societies. Since the loss in both societies is still uncertain, there is scope for further risk diversification, until each member is assured of wealth *(Y-p L)* independent of the state of nature.

This fact highlights how uncertain loss (or income) creates scope for pooling or diversifying of risks and how diversifying of risk converts uncertain loss (income) into certain loss (income). In other words, there is one-to-one relationship between pooling of risk and certainty of loss.

This above analysis is highlighted to bring home the point that there need be no relation between the size of society (defined in terms of number of individuals) and scope for risk diversification. Loss could be certain in a small society or could be uncertain even in large society. Typically a society will be face different risks, loss from each risk may be uncertain. However, the aggregate loss from different risk may still be a certain amount if the two risks are combined. This has bearing on the design of insurance scheme. In the design of insurance, the risk covered by insurance could be so chosen as to reduce the loss uncertainty. This is particularly needed in a small pool managed in-house.

(iii) Inpatient and Outpatient Care: Ideally, both these types of care should be available to the insured members. In case of illness the decision on whether or not the patient needs hospitalisation should be made professionally. It should not be a function of whether or not the patient has health insurance cover. In practice we find not many schemes provide insurance for both types of risks. Most schemes provide for inpatient care only. In India out of 28 schemes that provide health insurance, 16 schemes cover only hospitalisation expenses, 7 schemes cover only primary health care services and 5 schemes cover both primary health and hospitalisation costs. The reasons suggested for not providing outpatient care are varied: that people can, by and large, afford out-patient care because it is relatively

inexpensive; it is the inpatient care that pushes them into poverty trap; that administratively it is difficult to include out-patient care; and, that out-patient care would lead to cost escalation.

In the context of inpatient and outpatient care, three kinds of issues come up. These have to do with (a) affordability (b) renewal rate, and (c) spillover effect of outpatient care on inpatient care. We take each of these in turn.

(a) Affordability is an important issue in providing health insurance to the poor. Inclusion of both these types of care in an insurance scheme can be costly for the poor. Given the limited paying capacity of the poor, if one must include only one of the cares then should it be outpatient care or inpatient care? We explore this issue here.

Continuing with the case of risk averse agent, let there be now two types of risks being faced by the agent in period 2, while there is no risk in period 1. Let these risks be denoted by p and q, and the loss associated with these risks be denoted by L1 and L2 respectively. Let $p>q$ and $L1<L2$. Outpatient is generally high probability but low cost risk, while inpatient care is low probability and high costs risk. For the reason of comparability we assume that the probability and loss parameters are such that $pL1=qL2$. In words, the premium required to insure against each of these risks is the same. In the absence of any insurance, the agent's expected utility is given as:

$$EU= U(Y)+(1-p)(1-q)\ U(Y)+ p(1-q)\ U(Y-L1)+ (1-p)q\ U(Y-L2)+ p\ q\ U(Y-L1-L2)$$

The issue is: if the agent can afford to insure for only one type of risk, what should that risk be?

Let $P\ (=\ pL1\ =\ qL2)$ denote the premium amount that the agent must pay to insurance himself.

In case the agent insures for outpatient care, his expected utility would be given as:

$$U(Y-P) + (1-q)U(Y) + q\ U(Y-L2)\dots..(A)$$

In case the agent insures for inpatient care, his expected utility would be given as:

$$U(Y-P) + (1-p)U(Y) + p\ U(Y-L1)\dots..(B)$$

A comparison of (A) and (B) suggests that for (B) to be greater than (A), the following condition must hold:

$$(1-p)U(Y) + p\ U(Y-L1) > (1-q)U(Y) + q\ U(Y-L2)$$

or

$$p\ U(Y-L1) - q\ U(Y-L2) > (p-q)\ U(Y)$$

If the downside of the risk matters the most which is true in case of the poor, there is greater likelihood of the above condition holding true i.e., insurance for inpatient care yielding higher utility than insurance for outpatient care.

(b) Low membership renewal or high drop out rate is observed in many schemes. This could be due to number of reasons such as not benefiting from the scheme in any way, strict procedure for claims reimbursement, delays in reimbursement, denial of claims and so forth. One of the important reasons for high drop out rate is when members, after having joined a scheme, do not benefit from it in any way. There is a need to better understand high drop out rate in the context of high frequency, low cost risks (typically, outpatient care) and low frequency, high cost risks (typically, inpatient care). This is expected to be a serious

problem in schemes that provide for hospitalisation or inpatient care and not in schemes that provide for outpatient care. Typically, a scheme bought from a formal insurance company provides only for inpatient care, and is likely to suffer from high drop out rate.

While insurance in ex ante sense makes all the members better off, the members also evaluate benefits from insurance in ex post sense in deciding whether nor not to renew their membership. Typically, at the time of renewal of membership companies give discounts to members who do not make any claim. The people, for whom the insurance concept is new, tend to perceive insurance different from those who understand the concept. For them, insurance is useless if they do not gain from it in ex post sense in the first few periods of their joining the scheme. Therefore, those who do not benefit tend to drop out from the scheme after first few years. Typically, hospitalisation is a low probability and high loss event. Supposing in a society of 100 individuals, the hospitalisation rate is 10 percent then, on an average, 10 persons would benefit from insurance against hospitalisation in any given period. Assuming that each time a different set of individuals need hospitalisation, it would take 10 years for all the members to benefit from the scheme. And before all the members can receive benefits some of them who are not the lucky ones (or not unlucky ones to need hospitalisation) to receive the benefit in the first few years may drop out.

This way of perceiving insurance can be understood as follows. We continue with the assumptions of individual risk averse agent. In the absence of insurance the expected utility of the individual in a single period is: *EU = (1-p) U (Y) + p U (Y-L).* Supposing that $p = 0.1$ and that insurance is claimed by different sets of individuals each time. Under these assumptions, insurance scheme would take 10 (=1/p) periods (or years) for all members to benefit from it. The benefit from insurance is worked out as follow:

Over 10-year period, each member is likely to incur loss only once (under the above assumptions). Each member would have paid premium during all 10 years. We ignore the discounting issue for simplicity.

Individual's utility over 10-year period is given by: *[9 U (Y-p D)] + [U (Y-p D-L+D)],* where D denotes the level of insurance coverage bought. In this expression the first term denotes utility over 9 periods when the member paid premium but did not benefit while the second term denotes utility for a period when the member actually benefited from it.

Assuming full coverage is sold to the agent *(D=L),* his utility after buying insurance would be: *(1/p) U (Y-p L) = 10 U (Y-p L).*

On the other hand, if the individual had not joined the scheme his utility would have been: *(1/p-1) U (Y)+ U (Y-L) = [9 U (Y)+ U (Y-L)].*

Given this way of understanding insurance, the issue is how to design a scheme. The scheme should be designed in such a way that perceived benefit from joining a scheme is greater than not joining it i.e., *[(1/p) U (Y-p L)] > [(1/p-1) U(Y) + U(Y-L)].* This condition can be rewritten as:

[U (Y-p L) – U (Y-L)] > (1/p-1) [U (Y) - U (Y-p L)]

As can be seen from above, if the probability of illness is higher there is greater likelihood of the above inequality holding true. This then is the rationale for bundling risks (high frequency events), against which insurance is provided, in such a way as to ensure that the above inequality holds ex post sufficiently early for each individual joining the scheme.

The problem of high dropout is pronounced where insurance is bought from an insurance company i.e., in the intermediary type case. Insurance scheme that is managed in-house is less likely to suffer from this problem as there is high degree of solidarity among the members. In the provider type scheme, the problem of high drop out is generally not the case.

The problem of high dropout rate can also be viewed as a problem of discounting i.e., of the degree of impatience. The higher the discount rate the higher is the degree of impatience. The poor who grapple with meeting their day-to-day needs generally tend to discount future much more heavily than the non-poor. Given higher discount rate of the poor, a health insurance scheme must be so designed as to be able to provide benefits to maximum number members within few years. One of the ways is to introduced outpatient care, another way could be to organise free health camps (for health check ups, eye camps) so that all the members benefit from their joining an insurance scheme. Yet another way to minimise the chances of members dropping out from a health insurance scheme is to provide insurance against other kinds of risks such as death, accident as well. Indeed, in some schemes integrated insurance that includes insurance against other risk is offered, and SEWA is a good example of it.

SEWA has reported the claims rate (defined as number of claims per 1000 members per year) in case of health have varied between 15 and 23. In other words the probability of claims has been between 0.015 and 0.023. Since SEWA offers integrated insurance product, health claims form only a part of total claims. When the frequency of health shocks or illness is not very high, people may not feel tempted to join group insurance. However, if the risks are bundled in such a way that the frequency of the health risks covered by the scheme is high, that would attract people to the scheme.

(c) Outpatient care has spillover effect on inpatient care. If the need for outpatient care is addressed along with inpatient care, it tends to reduce the hospitalisation rate.

Conversely, if outpatient care is left unaddressed, the cost of insuring inpatient care would tend to be higher. One of the ways of addressing outpatient care is, of course, through insurance. In case of health provider insurance scheme (Type III), it is relatively easy to cover both inpatient and outpatient care. The most difficult type of microinsurance arrangement is where formal insurance provider enters into the picture. Where a community or an NGO manages the scheme, outpatient care too can be included but the danger is on the other side, that is, of not providing a cover for many types of inpatient care because of its high costs and greater risks.

Another possible way, which once again underscores the role of a nodal agency, is to have a provision of soft loan for outpatient care. In one of the UNDP sponsored experiments in India outpatient care is addressed by providing soft loans to members through self-help groups.[22] In some cases primary health care centres that are supposed to provide free primary health care services have been strengthened in areas where insurance scheme has been launched.

(iv) Benefits on Provision Side: To the extent that a grouping of clients (patients) helps in getting a better deal from the health care provider(s), organising an insurance scheme would help all the scheme members. The insurance scheme that is managed by health care provider is most beneficial to the members as provider tends to cross-subsidise low-income patients. In that case, the cost of medical services is lowered by joining insurance scheme than by staying out. Also, health care provision exhibits economies of scale i.e., cost of health care by a provider falls as more individuals avail medical services. The economies of scale exist because of the presence of fixed costs (cost of medical equipment etc.). Cost of health care comes down as more and more people seek health services. Health insurance by making the cost of health care affordable helps in increasing demand for health services.

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[22]   The UNDP has sponsored three different health insurance experiments for the poor in India, two of which are in state of Karnataka and one in W. Bengal state. In one of the experiments (which is in T. Narasipura region in Karnataka), the issue of outpatient care too has been addressed not through insurance but through (soft) credit.

Note that even when there is no further scope of risk diversification by increasing group size (and this happens when size of loss remains fixed in a society), increasing the size of the pool still is advantageous because of economies of scale in health care provision.[23] Continuing with the earlier notations, expected utility of an agent in the absence of insurance is $(1-p) U(Y) + p U(Y-L_0)$, where L_0 denotes the loss amount. However, after joining an insurance scheme the member now benefits in two ways: one benefit is, of course, from transferring risk, and the other benefit is of lowering of premium on account of special discounts that an insurance provider or a nodal agency can negotiate with the health provider (due to the presence of economies of scale). The second type of benefit may or may not be available to the non-members. Thus,

$$[(1-p) U(Y) + p U(Y-L_0)] < U(Y-pL_0) < U(Y-pL_1).$$

This is because $L_1 < L_0$, due to cheaper cost of treatment in the event of illness after joining insurance scheme. As mentioned above, this benefit is likely to be present in the provider type schemes, and could take the form of inclusion of outpatient care for the price (or premium) of inpatient care. However, if this could also be availed by the other two scheme types then the scheme would tend to attract higher membership and also experience lower dropout rate.

(v) Loss/risk reduction: Insurance provision *per se* does not lead to any loss reduction in a society. It only redistributes financial consequences of loss across insured individuals. It might sometimes discourage loss reduction when it leads to moral hazard problem (discussed later in the text). Loss/risk reduction can be of two kinds: one where the benefits

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[23] An important issue that comes up when discussing the issue of fixed costs is the appropriate form of subsidising a scheme. In a scheme in Ghana, the donors gave subsidy in the form of capital/medical equipment. Even some of the administrative costs are borne by the donors. The premium cost is used to cover variable medical expenses only. Is incurring the fixed cost the best way of giving subsidy? If there is no principal-agent (or the agency) problem, then it may be a better way of giving subsidy. If the principal-agent problem exists, giving subsidy to meet fixed costs may reduce incentives of the organisers to enlarge the pool and thereby to reduce interest cost on the borrowed capital for buying fixed equipment.

of loss/risk reduction are fully internalised, and two, where reduction activity by any single individual benefits other members of the society as well. Generally, insurance contracts are designed to encourage loss/risk reduction. In situations where the benefits of loss/risk reduction are fully internalised (where there are no benefits to any other person from loss/risk reduction by any individual), insurance can be so designed as to encourage loss / risk reduction among the insured individuals. For example, a limit on the maximum number of claims from a single family can help in this regard. But loss/risk reduction activities having positive externalities are in the nature of public good, and therefore justify state or collective action. In the presence of positive externalities in loss/risk reduction, it may be worthwhile for a nodal agency to invest some resources in such activities. To be beneficial to the insured members, the amount spent on loss reduction by a nodal agency should be less than the gains to the insurance provider from spending on claims. The higher the membership from any particular geographical region, the greater will be the scope for undertaking such loss/risk reduction activities, especially if the non-members are difficult to exclude from the benefits. This way insurance enables loss reduction that otherwise would not take place due to collective action problem. Scope for loss / risk reduction is likely to be greater in schemes managed in-house and in the provider type schemes. Provider type schemes tend to be more geographically concentrated than the other two.

(vi) Informational Problems: Asymmetric information between the insurer and the insured members and also with the health care providers gives rise to the moral hazard and adverse selection problem. In low resource setting there is a limit to which premium can be based on the risk profile of individuals. Premium rate is determined on community basis but the premium amount collected could vary depending on the family size. When premium is based on community rating, low-risk members tends to cross-subsidise high risk members. Given this, the low-risk members may not feel inclined to join or may tend to drop out after joining. This tends to reduce the membership size. Appropriate choice of unit of insurance or of membership can introduce an element of compulsion. Introducing some element of compulsion in membership, for example, having family as opposed to individual as a unit

of membership, can mitigate the adverse selection problem.[24] The moral hazard problem in taking preventive care as well as with the over-consumption of medical services can potentially exist in microinsurance schemes. In schemes that provide for wage loss there is a tendency among patients to seek hospitalisation even for minor illnesses. Similarly, the schemes in which outpatient care is not addressed, this tendency is likely to be higher. Addressing outpatient care (either through insurance or otherwise) will tend to check against the tendency to get hospitalised when it is not required. An insurance contract can be so designed as to not encourage or to mitigate the moral hazard problem. Introducing co-payments is one of the ways of reducing the problem but co-payments also can impose a barrier. The manager type (Type II) or the provider type (Type III) schemes generally suffer less from such problems.

(vii) Maternity Care: Maternity care is generally considered separate or distinct from other forms of medical care/treatment. This is so because this condition is not totally independent in the same sense as other illnesses are, and it affects well identified section of population. Since this condition is the outcome of conscious family planning, and in some sense predictable, this is sometimes excluded from the benefit provided in an insurance scheme. Also, since no gender distinction is made with respect to the premium amount, inclusion of this benefit results in unintended cross-subsidy. This may tend to reduce the size of membership. In a scheme where family is the unit of insurance or where insurance is exclusively of women members as in case of SHEPHERD, maternity care can be included. In these cases, the cross subsidy element is unlikely to be significant as to dissuade the population from joining the scheme. Where the unit of membership is individuals and the scheme is common for both men and women, maternity care should be provided an add-on option to the insured women members. In SEWA insurance scheme, over 75 percent of the

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[24] The unit of insurance could be an individual, family/household or even the entire village or the community. Health insurance arrangement involving formal insurance provider generally is sensitive to the size of family members, even if it allows for family/household membership, whereas the community or an NGO managed schemes tend to disregard family size. A case where family, as opposed to individual, as unit of insurance reduces membership is given in Ahuja and Juetting (2003).

members are women and they are offered distinct insurance package. The package is integrated as it covers risk of death, accident along with risk of illness. Even so, maternity benefit is excluded from this standard package.[25]

Maternity insurance is one option. Another option especially when an event is somewhat predictable is having a separate fund that can be used to give loan or credit. SHEPHERD has created a fund called Sugam fund for extending financial assistance to pregnant women for their safe delivery by providing them soft loan of Rs. 2000 to Rs. 3000.[26]

4   Role of Government

One of the main policy issues here is the consideration of how much, if any, subsidy be provided by government, and how should it applied. In a social sector like health, there is a clear justification of subsidy to the low-income people. To the extent the development of health insurance helps in mobilising some resources from the low-income members, it reduces the need for subsidy in an area traditionally considered to be the exclusive responsibility of government. But development of microinsurance doesn't mean that government is spared of its responsibility. The experience with micro health insurance in the country suggests that sustainability of the existing schemes critically depends on some external funding. Therefore, providing subsidy is essential for upscaling/replicating of similar schemes.

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[25]   Members can pay premium in two different ways. Either annual premium or they could make a fixed deposit in their account and the interest income on the fixed amount can go towards paying their premium. Insurance against maternity care is given as incentives to encourage women to go for the fixed deposit option for paying premium. Fixed deposit option links well with the savings and lending activities of SEWA and also guarantees membership renewal.

[26]   SHEPHERD found the rural women to be prone to many medical problems. In particular, women aged above forty are frequently affected by many gynecological and other illnesses that drive them to spend more on health.

Important issues here are what should be the appropriate form of subsidy and through whom should it be channeled?

There is a need for increasing public subsidy to the health sector which currently accounts for just 0.9 percent of GDP, as well as for reorienting the existing subsidy towards preventive and promotive care that mainly benefit the poor rather than curative care that benefits the richer sections of society as well.[27] Providing health security to the poor calls for tackling both outpatient care and inpatient care needs simultaneously. More so, when outpatient care has a positive spillover effect on the inpatient rate. Either primary health care should be provided free or could be integrated with subsidised health insurance scheme for the inpatient care. In health care provider (Type III) scheme the integration can be easily effected. But in other two types of schemes this would depend on the administrative ease.

The first claimant of subsidy is the outpatient care. For inpatient care, the contributory capacity of the poor needs to be established and harnessed. In providing insurance for the inpatient care, perhaps the best way to subsidise is by way of transaction costs and, perhaps, the best agency to channel subsidy is through a nodal agency. Such subsidy could be linked to the number of individuals who participate in the insurance scheme. Providing subsidy to health care provider tends to be non-specific and lowers the negotiating capacity of a nodal agency in developing an insurance scheme that is not initiated by health care provider. Similarly, providing subsidy to insurance provider may help in offering attractive insurance package (higher benefits at a given premium) but leaves the issue of transaction costs unattended which can become a barrier to increasing enrolment/membership.

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[27] Primary health care centres that are supposed to provide free primary health care services are currently in pathetic conditions in most states. Public subsidies to secondary, and tertiary health facilities needs to be redirected to strengthen primary health care facilities, and providing subsidy for developing health insurance arrangement for inpatient care.

Another major policy issue is: what is the best way to guide the development of the microinsurance activity through appropriate policy/regulation. The current regulation of making it mandatory for all insurance companies to underwrite certain percentage of its business from rural and social sector is, perhaps, not the best way to handle it. Note, however, that the present regulations do not call for subsidising such policies. For-profit insurance companies try to maximise their profits even on insurance contracts sold to the low-income people. With very little prior experience, insurance companies are making good profits even on such policies. This is partly because the claims are low in the formative years due to weak information, education, and communication while the premium rates are calculated on actuarial basis. Indeed, on some schemes offered to the poor the insurance companies, including public insurance companies, ended up making fantastic profits. What is the point of giving subsidy if the subsidy ends up in the hands of insurance companies (both public and private) in the form of profits![28] The best way, perhaps, would be if an insurer could be organised along the lines of mutual company where the profits, if any, are redistributed among policyholders. A single entity dedicated to providing insurance for all risks facing the poor can also ensure certain minimum level of health security to the poor. Extending health insurance is not an objective in itself. The objective is to build certain decent level of health security through insurance. Currently, the annual premium per member ranges between Rs. 20 to Rs. 360 and the benefits range from Rs. 1,250 (plus primary health care) to Rs. 30,000 (plus primary health care).

5   Conclusions

Microinsurance that deals with insurance for the poor is emerging in India. This is partly the result of policy intervention and partly due to the development of micro-finance activity in the country. In extending the reach of insurance to the poor, the role of nodal agency is deemed crucial. In this paper while bringing out the role of nodal agency in extending health insurance, we discuss how health insurance for the poor is different from

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[28]   In all the three UNDP experiments the claims ratio is reported to be very low, resulting in good profits to the public insurance company that offered health insurance contracts.

health insurance in general. Depending on the functions that a nodal agency performs, all microinsurance arrangements taking roots in the country can be categorized in to three distinct types: intermediate type, manager type and provider type. Each type has its own strengths and weaknesses. All these types may be appropriate for a large and diverse country like India. We analyse selected conceptual issues that are generic to all types of health insurance initiatives as well as those that are specific to a particular type. A good understanding of these issues is important to remove some of the weakness in the design of these schemes. More empirical studies are needed to further our understanding of these schemes so that these schemes can be shaped better.

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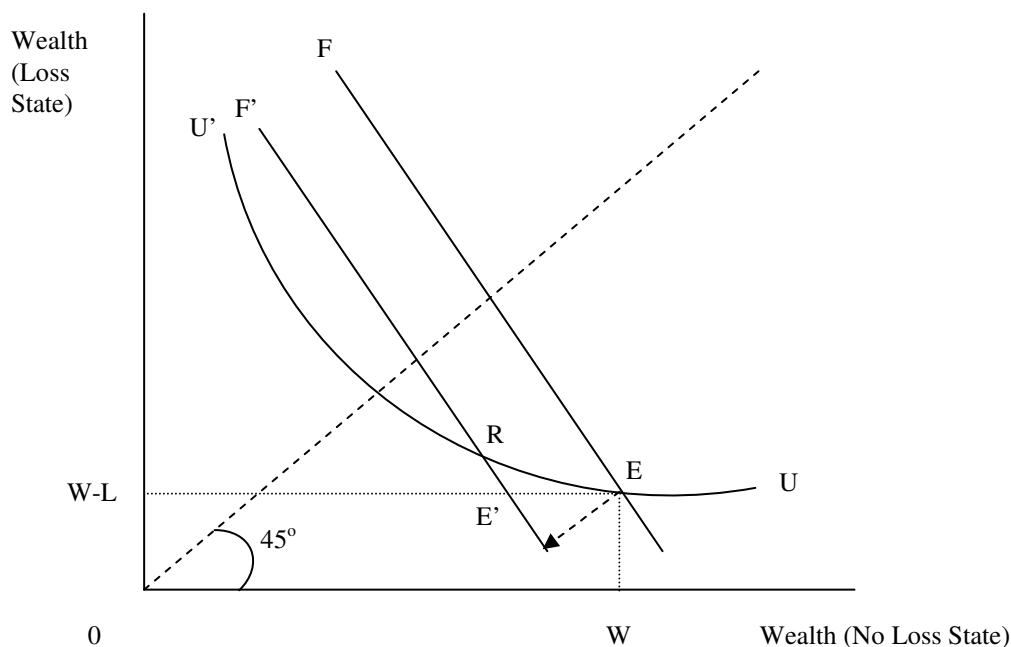
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Appendix

Supposing a risk averse utility maximising agent is faced with two possible states of nature: a good state, whose probability is denoted by (1-p), in which his income is y and a bad state whose probability is p, in which he experiences a loss of L. The bad state represents the state when the agent falls sick and therefore has to spend part of his income on healthcare to pull himself out of sickness. Faced with this situation, agent's expected utility is given as: $(1-p)U(W)+p\ U(W-L)$, where the first term represents agent's utility in good state and the second term represents his utility in bad state. If this agent is given a choice to buy insurance at an actuarially fair price, the standard result in the literature shows that the agent would buy full insurance.[29] His utility after the purchase of insurance would be given as: $U(W-p\ L)$, where pL denotes the premium paid by the agent. In the event of insurance, the amount spent by the agent on his healthcare would be fully reimbursed to him by the insurance company. Hence, the agent experiences no income loss beyond paying pL as premium. The agent is thus better off with insurance than without it. This is reflected in terms of the utility. The utility the agent gets after the purchase of insurance is greater than without it, i.e., $U(W-p\ L) > (1-p)U(W)+p\ U(W-L)$. Note that the premium amount does not include any transaction costs that the agency providing insurance may have incurred. If we include transaction cost, the agent may still buy insurance provided such costs are within certain "reasonable" limits. High transaction costs can make insurance unattractive to the agent, and in such situation the agent may be better off pursuing alternate risk management strategies than buying insurance. We explain this with the help of figure below.

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[29]   Price of insurance is actuarially fair when the price per unit of insurance coverage is equal to the loss probability. This price includes no transaction costs. Typically, insurance companies charge higher than actuarially fair premium so as to cover the transaction costs and also (in a competitive market) earn normal profits.

In the above figure, point E represents the situation before the agent buys insurance. The level of utility or satisfaction that the agent gets in the absence of insurance is represented by the curve UU' (the further away this curve is from the origin the greater is the utility obtained by the agent). This is called indifference curve because the agent is indifferent between any two points on this curve. Now, suppose EF represents the price line faced by the agent when insurance is available to him at actuarially fair price. Faced with this price line the agent would choose full insurance and move on to the point where the line EF intersects with the 45^0 line. By purchasing insurance the agent moves on the higher indifference curve. Note that the actuarially fair price does not include any transaction costs. Generally, insurance companies do build this cost in any insurance program. Supposing costs charged by insurance company is denoted by EE'. The new price line now would be E'F'. If the agent can choose the coverage level, he would again buy full insurance and move on the point where the line E'F' intersects with the 45^0 line, thereby still getting higher utility with insurance than without it. However, in case of insurance to the low-income people differs in the sense that it is a group contract and not an individual contract. Typically, in a CBHI an insurance scheme is developed and offered to the entire community and not to any single individual. A group member does not have freedom to choose any coverage level. The only choice that any of the community members has is whether or not to buy insurance. The main idea behind designing CBHI is to keep the costs low so as to make it affordable. Given the transaction costs, if the coverage level is on any point represented by the segment E'R, the agent would not buy insurance. However, even if the coverage level is such as to fall on the segment represented by the point R and the 45^0 line (the agent is better off with insurance), the agent may still not find it attractive then alternate strategies such as self-insurance or savings for the risky (bad) state. Hence the need to keep the transaction costs low.