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Health Risks in Bangladesh: Can Microinsurance Prevent Vulnerability to Poverty?

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Abstract

Health risks are unpredictable as to occurrence, as to the severity of impairment, and in terms of the costs these inflict on the victims (both in terms of medical care and foregone earnings) and society at large (i.e., via health externalities). In spite of advances in microcredit and evolving societal institutions, the effective coping mechanism for the poor is often to rely on self-insurance, leading to exhaustion of savings (cash or in kind) or loss of capital. Consequently, health shocks can trap vulnerable households indefinitely into poverty cycles. Using recent household survey data, the present study analyzes the common health shocks faced by the poor, and how they meet these challenges, and the type and extent of expenditure they incur in the absence of market insurance. It then examines whether in principle these shocks can be efficiently spread by the provision of market insurance. Several well-known pilot type health insurance plans are analyzed for their log run viability, and finally, the paper puts forward a number of proposals which may overcome the standard issues of moral hazard and informational asymmetries in designing a feasible micro health insurance contract relevant in a developmental context. This is done using experience and data drawn from Bangladesh and India where possible.

JEL Classification Codes: D82, I11, I32 and O16

Key Words: Health shocks, poverty cycles, micro health insurance, self insurance

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1. Introduction

Health is a critical factor in determining long-term living standards by maintaining and augmenting labour productivity, and thus the economic cost of illness is two-fold; the cost of medical care and the loss of income associated with reduced labour supply and productivity. In the absence of significant savings or public pension schemes, the poor are often forced into deeper poverty (and the low-income non-poor into poverty) by their limited ability to cope with the events. Short-run self insurance mechanisms such as the depletion of savings, selling of assets, loan from money lenders and exhausting current income flows may typically allow then to ride out smaller events, but not health events that compromise the capacity to perform activities of daily living (ADL). In an Indonesian sample, Gertler & Gruber (2002) found that even though many families were able to insure minor illnesses, they were unable to maintain their living standards in the case of major illnesses.

The close relationship between health shocks and poverty has also been recorded in the Bangladesh context. A Grameen bank study revealed that 42 percent of its borrowers, who failed do improve their socio-economic condition, 60 percent had experienced a serious illness in the family and attendant income losses and/or health expenditure (Ahmed, et al, 2005). The provision of meaningful health coverage would thus be seen as an important risk-mitigation element in the lives of the poor. Improvement of the primary health care system as well as a host of complementary measures, as noted by Gertler and Gruber (2002), would surely go a long way in protecting the consumption level of the poor; however, low budgetary allocation and weak logistical capacity of the public health system in developing countries do not hold out a big hope in this direction. In any event, this paper focuses exclusively on health insurance. The goal of the paper is to offer a preliminary analysis of the health environment faced by the rural poor, their principal illness episodes, their capacity and willingness to pay for health services, and to deliberate if a suitable package of health insurance would be a feasible alternative that may lessen the risk of vulnerability to poverty on account of health events.

What is micro health insurance (MHI)? MHI is typically defined as a risk management tool that can reduce economic losses of low income or poor households, which may arise out of adverse health events[2]. The concept of microinsurance need to be distinguished from the formal insurance services in the sense that the former is especially designed for the low net worth

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[2] While the terms 'health microinsurance' (HMI) and 'micro health insurance' (MHI) are both widely used in the literature, and often even interchangeably, this paper has chosen MHI as the preferred usage.

households, and as such insurance would be presumed to be of value to the target group only if it lessens the risk of vulnerability to poverty. Consequently, microinsurance products possess some distinguishing features in all dimensions of the scheme, namely design of the coverage, premiums, delivery channels, terms and benefits (Ahsan, 2009, Churchill, 2006, MIA, 2006). In most contexts, specialized insurance companies, non-governmental organizations (NGOs) or self-help groups (SHGs) focussed on the health sector as well as microfinance institutions (MFIs) are involved in the provision microinsurance services, often in collaboration with each other. Entirely conspicuous by the absence in Bangladesh are, however, the registered insurers.

The MHI market in Bangladesh has evolved in a manner parallel to its more illustrious precursor, microcredit, namely as home-grown experimentation. This is not totally surprising since most of the providers are the MFIs themselves who had been in the forefront of the microcredit innovation in the country and beyond. Hence there ought to be a lot that one can learn from these episodes. BRAC, Ganoshashthya Kendra (GSK), Grameen Kalyan (GK), Sajida Foundation (SF), Society for Social Services (SSS) and many other NGO/MFIs have been offering a variety of micro health insurance (MHI) products in Bangladesh since as early as 1978 (at least in the case of GSK). It ought to be clarified that since the early 1970s many MFIs have been, alongside the provision of microcredit, engaged in a variety of health interventions aimed at provision of primary care, vaccination, family planning, nutrition and hygiene advisories as part of their social mission to the poor, and some have even specialized in these ancillary services rather than credit delivery itself. But these were not designed as 'insurance' in any formal sense of the term.

With these remarks serving as the introduction (section 1), the rest of the paper proceeds as follows. The analytical nexus between health risks and vulnerability to poverty is explored in section 2, where it is argued that informal mechanisms at the disposal of the poor are inadequate to offset losses in income and consumption due to major illnesses. Consequently, public policy has a role to play, which can take a variety of directions; however it is proposed that an initiative that has the likelihood of paying high dividend would be to facilitate the provision of private insurance by instituting efficient modalities of contract enforcement and an enabling regulatory framework. Next, in section 3, a brief stock is taken of the existing health status of the general population, improvement in health facilities and personnel, and the recent progress in health indicators. Section 4 describes the broad features of health events and associated expenditures incurred by the poor as found in the Monitoring and Evaluation Survey (MES) carried out by Palli Karma Shahayak Foundation (PKSF), a wholesale microcredit provider to its partner organizations (POs)[3]. The role and scope of MHI in mitigating risk and vulnerably is then explored in the Bangladesh context in section 5, where a brief overview is also given of several MHI programs operating in the country. Section 6 points to the major challenges that lie in its implementation and offers a few remarks on how best to come to grips w ith these. Some closing remarks are offered in section 7.

[3] The name may be translated as "Village Employment Facilitating Foundation". PKSF, over and above a playing a wholesaler's role, provides guidance, supervision and mentoring services to its POs, and has de facto been an informal regulator for the segment of the market it caters to.

2. Health Risks, Vulnerability and Poverty

Concave preferences would suggest that households value consumption smoothing over time, and hence dealing with the high stake events of low probability is very important to optimizing agents. Given the dependence of income on climate, health shocks, global (market and non-market) events, public policy regime in force (e.g., input and output price support) and other vagaries of nature, the potential demand for minimizing the impact of risk on the standard of living would be expected to be rather high. The probability or risk of falling into poverty or (deeper poverty) at least once in the near future may be defined as vulnerability, which emerges whenever there are inadequate (formal and informal) means of smoothing consumption in the face of various shocks. Morduch (1994) has argued that poverty and vulnerability reinforces each other in the absence of efficient coping mechanisms.

Absent market insurance, how good are the extant coping mechanisms? Following an analysis of the evolving informal risk shifting devices in rural societies it appears that in spite of advances in microcredit, effective coping mechanisms remain limited for the landless and small farmers, and one therefore needs to pay attention to idiosyncratic risk along with region-wide covariant risks (Ahsan, 2009). The pioneering work by Townsend (1994, 1995), Lim and Townsend (1998) and Morduch (2003) suggests that a good part of the consumption smoothing is actually accomplished by adjusting grain inventory, hence the primacy of self-insurance. Persistent poverty may thus be widespread among those who are least able to benefit from self-insurance. In other words, there is likely to be widespread market failure in many dimensions of risks facing the poor and near-poor with the possibility that poverty cycles may trap many of these households indefinitely.

In the area of health shocks per se, note that Townsend (1994) had originally found that idiosyncratic shocks such as sickness or unemployment did not matter as much. Kochar (1995) also found that only in peak period, male absence led to a fall in family income and an increase in informal borrowing, but such illness related male absence had little impact in periods of slack activity. Gertler and Gruber (2002) however provide convincing evidence that severe illness has dramatic implications for family resources by reducing labour supply and earnings of household heads, and (to a much lesser extent) by increasing medical spending. They go on to show that "indeed, families are able to insure less than 40 percent of the income loss from illnesses that are associated with a very severe loss in functioning" (p.52). They also point out that past studies may have missed the link between health shocks and consumption decline as they failed to define properly the severity of the health setback. The Indonesian data they had access to contained very detailed information that allow the authors to categorize the degree of illness severity.

Using panel data (two waves, 1991 and 1993) consisting of 3,933 households (from the Indonesian Resource Mobilization Study, IRMS), Gertler and Gruber (2002) contrast between self reported 'illness symptom' as distinct from the physical ability to perform 'activities of daily living' (ADL). They find that while the former may lower labour supply marginally if at all, the most severe form of incapacity in terms of ADL would lower supply by 31 hours per week. This distinction between the two measures of health also carries over to the labour force participation decision. These labour supply effects naturally lead to corresponding impacts on family earned income due to of health shocks. In terms of the impact on consumption, Gertler and Gruber are unable to reject complete insurance when it comes to 'illness symptoms', but the inability to perform ADL have 'significant and sizeable' decline in consumption (up to 20 percent). "We estimate that 35 percent of the costs of

serious illness are not insured by other sources available to households. We also find that the more severe the illness, the less households are able to insure. Households are able to fully insure the economic costs of illnesses that do not affect physical functioning, insure 71 percent of the costs resulting from illnesses that moderately limit an individual's ability to function physically, but only 38 percent of the costs from illnesses that severely limit physical functioning" (p.67).

How should public policy address the deleterious consequences of health shocks in the economy? The poorly equipped (in terms of both physical facilities as well as human resources) public health system performs even worse on account of the weak administrative capacity of the bureaucracy in charge. In such a vacuum, promotion of market provision of microinsurance would appear to be the only realistic alternative for public policy in such a context. This can be done by strengthening the legal system thus facilitating contract enforcement as well as by creating an enabling regulatory framework for the microinsurance industry to flourish (Ahsan, Barua and Tax, 2009).

3. The Bangladesh Health Background

(a) HIES Survey Findings: To obtain a broad profile of adverse health events encountered in the country, one can turn to the latest available Household Income & Expenditure Survey (HIES) of 2005 (released in May 2007), where the sample size was 10,080 households (6,400 rural and 3,680 urban). This document however provides a description of the various conditions of those who had suffered during the past 30 days, but does not report the ratio that did not experience any illness at all. In any case, among all illnesses, the most common (indeed more than half) is of course the 'fever', which is usually a symptom of various conditions, ranging from common cold/flu, to minor undiagnosed infections. Among more serious illnesses occurring within the preceding 12 months of the survey, rheumatic fever (11.3%), respiratory illnesses such as asthma (8.6%) and heart disease (4.5%) are more common than diabetes (2.0%) among the rural population. For urban residents, the pattern changes somewhat with the order being diabetes (8.9%), respiratory illnesses (8.3%), rheumatic fever (8.1%) and heart disease (5.8%). Overall then, rheumatic fever and respiratory illness would appear to be the two more common types of diseases in Bangladesh.

There are however, gender dimensions to the pattern as well, namely that rheumatism appears to afflict women more than men (12.3 vs. 8.5 percent). The HIES survey does not uncover other gender issues such as gynaecological or other shocks which are more specific to women's and maternal health or the health impact of physical assault and harassment of females (Cohen and Sebstad, 2005).

In terms of medical intervention, for the rural population, the most common practice is to get advices from the sales staff of pharmacies (41.3%); while a mere 18% visit a doctor, most of whom are in private practice. Although the 'quality of service' is of value to both rural and urban population, the distance aspect as well as cost considerations force them often to compromise the former[4]. Of those not seeking treatment, while a strong majority (60% in rural areas) believed that the illness was not serious enough, there were 28.3 percent rural households (double that in urban areas) who reported high expenditure as the main reason

[4] Ahmed, et al (2005) argue that high private health care costs (most functioning health facilities being in the private sector) and unsatisfactory outcome of health expenses typify the recent BGD experience.

Table 1: MDG and Related Health Indicators (Bangladesh)

Indicator	Area	1997	2006	Change	MDG/ National Target
Crude Birth Rate (Per '000)	National	21	20.6	(-1.90%)	
	Urban	16.2	17.5	(+8.02%)	
	Rural	24.5	20.7	(-15.51%)	
Crude Death Rate (Per '000)	National	5.5	5.6	(+1.81%)	
	Urban	4.2	4.4	(+4.76%)	
	Rural	6.5	6.0	(-7.69%)	
Average Life Expectancy (Year)	National	60.1	65.4	(+8.81%)	
	Urban	62.3	68.0	(+9.14%)	
	Rural	59.4	64.6	(+8.75%)	
Infant Mortality Rate (per '000)	National	60	45	(-25%)	
	Urban	49	38	(-22.44%)	37 by 2010
	Rural	69	47	(-31.88%)	
Child Mortality Rate (1-4 yr, per '000)	National	8.2	3.9	(-52.43%)	
Maternal Mortality Rate (per '000)	National	3.5	3.37	(-3.71%)	2.4 by 2010
	Urban	3.1	1.96	(-36.77%)	
	Rural	3.8	3.75	(-1.31%)	
Total Fertility Rate (per woman of 15-49 yrs)		3.1	2.41	(-22.25%)	2.20 by 2010
Incidence of Low Birth-weight Babies					

Source: MoF (2008)

for non-treatment. Data on actual health expenditure reveal that in both rural and urban areas, more is spent for female patients than male, which may well reflect the maternity related costs including childbirth.

In terms of financing health expenses, the most frequent answer was that they manage it out of household savings (i.e., 15% of rural and 10% of urban population), while a small fraction (typically in rural areas) resort to selling and mortgaging assets or borrowing from money lenders. It would thus seem that a sizeable portion of poor households are left

vulnerable by using up regular income, savings or other assets in financing health expenditure, which can lead to a fall in consumption expenditure. The inefficiency of this type of self insurance as a risk management mechanism is well recorded. As mentioned by McCord (p.283) "when many people decide to liquidate their productive assets and move into deeper poverty simply to recover from risky events, it becomes apparent that current risk management mechanisms are inadequate".

(b) Aggregate Health Outcomes: In spite of low overall spending on health care relative to many developing countries, Bangladesh has made significant progress toward reaching the health related MDGs in recent years[5]. Over the past decade, life expectancy (both rural and urban) has increased by about 9 percent, while total fertility has declined by 22 percent to 2.41 per woman of child-bearing age. Infant mortality has fallen by 32 and 22 percent in rural and urban areas, respectively. Maternal mortality in rural areas though has not budged at all over the past decade (3.80 vis-à-vis 3.75 per thousand). What may be the key reasons behind the strong overall outcome? NGO activity which makes better utilization of donor and other charitable trust funds may have played an important role. However, there is still a long way to go; in spite of the progress, the current figures are not as favourable as those observed in middle income countries such as Egypt, Lebanon or Tunisia.

Table 2: Update on Health Personnel and Health Facilities

Indicator	Previous	2007	National Target (2010)
No of Doctors		44,632	
Population per doctor	4,915 (1997)	3,140	
No of Registered Nurses		20,129	33,000
Population per Nurse	9,500 (2001)	7,000	
No of Hospital Beds		38,211	
Population per Bed		3,670	
No of Upazila health Complexes		419	

Source: Mostafa and Ahmed (2008) and MoF (2008)

[5] According to WHO (2001) average health spending in Bangladesh stood at USD 58 per capita in 2000.

Surprisingly, health system data is hard to come by; for example, many of the information in Table 2 are missing. In any event, it is quite evident that the overall supply of medical personnel has been in an increasing trend over the recent past.

4. Overview of PKSF Panel Data

The HIES sample cited above presents a general picture as the survey objective was to take a broad account of income and expenditure patterns without any special reference to health. A more informative survey was carried out by the Bangladesh Institute of Development Studies (BIDS) as part of an examination of Monitoring and Evaluation System (MES) of Palli Karma Shahayak Foundation's credit program (PKSF). The survey covered about 3,000 poor (defined to be essentially landless except for homestead) rural households, many of whom had access to microcredit typically through the partner organization (PO) network of PKSF. Indeed four repeat surveys were conducted on the matched sample during 1998, 1999, 2000 and 2004-5, though the scope of the final survey was a bit broader in scope as it drew references to earlier surveys and posed related questions. Though the focus of the survey was to learn of the broader impact of microcredit, there were adequate questions related to health related events which are relied upon here to draw inferences on the latent demand for health services and the willingness to pay for these, and thus indirectly on the demand for insurance among the rural poor.

In describing the major features of the PKSF survey, we contrast these with another well-known survey carried out by the MIT Poverty Action Lab (PAL), which directly explored the link between health shocks and economic vulnerability using household and individual level data from Udaipur District of Rajasthan, one of the poorest states in India (Duflo, 2005). The principal premise in this type of analysis is that health shocks are most unpredictable and often the most common reason why poor families are pushed into extreme poverty.

(a) Economic background of the sample: Of the 2858 households (hhs), the largest occupational share was in agriculture (broadly defined to include poultry and fishing), about 30%. And the next was 'wage employment' in various service sectors (categorized as 'services'), about 23%. The rest of the population were typically in various freelance/self-employment activities such as agricultural labourers (12%), non-agricultural labourers (3.0%), rickshaw/cycle van pulling (8.2%), vending (e.g., vegetable, fish and rice: 3.6%), and retailing (groceries and stationeries: 2.6%). About 8.2% were either outright unemployed or not in the labour force (on account of age or disability) and a further 8.8% were not categorized.

In terms of literacy and educational background, about 57.4 % did not attend school at all and were essentially illiterate, while 17.5% went to school for less than 5 years and another 22.3% studied more than six years. Given that many of those claiming to have attended school for less than 5 years would be evaluated as 'illiterate' (i.e., not being able to read or write in vernacular), it would appear that illiteracy among the poor is more pervasive than in general population[6]. In similar vein, the Indian survey cited above, found that of the 2519 individuals (comprising 1023 households), more than half were uneducated and nearly 60 % underweight.

(b) Exposure to Risks: What is the probability that a household will face some form of unforeseen shock over a five-year period? We measured this probability by obtaining the

[6] Nationally average literacy among adults is about 43 % while that among the youth (below 25) is about 45%.

number of households who didn't face any crisis over the last five years. Using BIDS-PKSF 2004-05 survey data, it is observed that 54% of total households are exposed to some form of risk (i.e. death of the main earner, crop damage, large expenditure due to illness, etc). Thus about 11% faced some risk on an annual basis; though 5 years is too short to make a claim of this type.

Table 3: Five-year Exposure to Risk by Households (2000-2005)

	Frequency	Probability
Exposure to risk	1,548	0.54
No Exposure to risk	1,294	0.46
Total	2842	1.00

Source: BIDS-PKSF Survey, 2004-5, authors' calculation

(c) Frequency and the Extent of Major Shocks: Among the common sources of vulnerability, (i) 22% reported *crop damage* while (ii) close to 19% of the incidents involved large expenditure *due to illness*. About 6% cases related to each (iii) *flood losses* and (iv) *death of cattle*, while (v) unemployment (i.e., wage loss) due to illness affected another 4.4% (Table 4). Thus we note that expenditure due to health crises and/or lost wags due to illness, along with crop losses are the most significant source of vulnerability facing the poor.[7] Again interpreting these in annual frequencies, it would appear that about 4 percent of the sample would face high health care costs (and perhaps slightly more on account of crop damage) on an annual basis[8]. There was no comparable information in the Udaipur sample as the latter study focused only on health events.

In terms of the magnitude of average financial loss, and focusing on insurable events, the first few were: (1) death of the main earner ($325 annually?) but low probability of 1.4% over 5 yrs, (2) illness expenditure ($160), (3) crop damage ($155), (4) cattle loss ($140), (5) wage loss due to illness ($121) and (6) flood loss ($93)[9]. Other than flood, most of these shocks are idiosyncratic in nature thereby opening a scope for insurance.

(d) Health Shocks & the Pattern of Health Expenditure: Duflo defines health shocks as events that have a high impact but occur with a low probability. In the Udaipur survey it is seen that 8% of the individuals spend more than $20 and almost 2% spend more than $100 per month on health. The PKSF data under review here also indicates a very similar

7 Pending further investigation, we could not just add the proportion declaring large expenditure (19%) and the 4.4 % who lost wags due to illness as the largest 'health' crisis category of 23.4% since it is plausible that some households who faced large expenditure may have also been the victim of lost wages in a significant way due to illness.

8 This would require a qualification since the record is on the basis of households, and typically micro health insurance, where available, is also on a similar basis, so the proportional interpretation appears correct, though typically several members within the household will be insured, and as such the total number of insured will be much larger.

9 The income loss due to death of the principal earner is shown as an amount that appears plausible if interpreted as an annual figure, and it would thus be appropriate to think of it as such since other magnitudes (e.g., the present value to future earnings) would be too complicated to ask and obtain from the respondents.

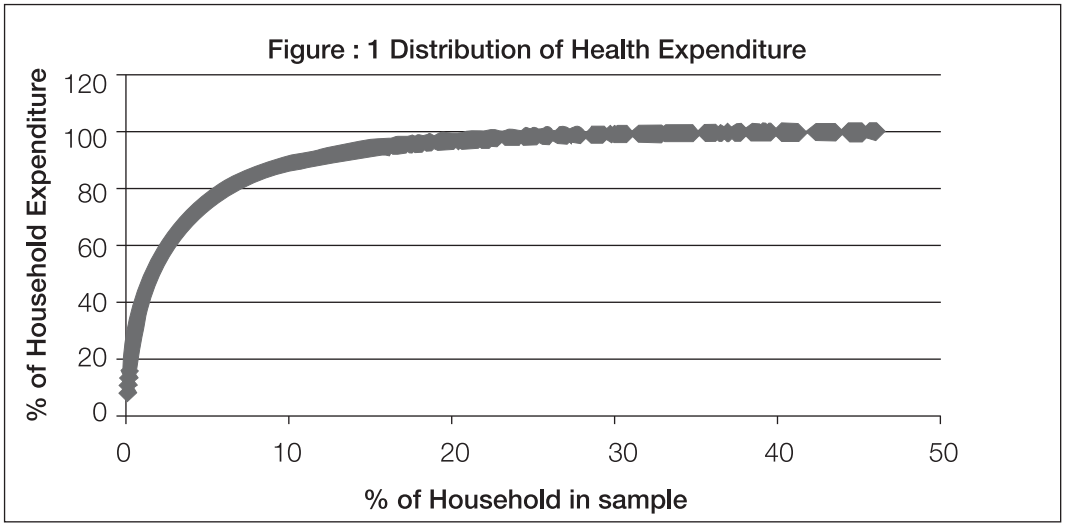
Table 4: Occurrence & Incurred Losses due to Various Crises (2000-2005)

Type of crisis (code)	Freq.	Probability (per household)	Monetary loss due to crisis (in BDT)		Expenditure for coping with the shock (BDT)	
			Average	Max	Average	Max
Death of main earner	41	0.014	22,115	150,000	17,500	30,000
Crop damage	623	0.219	10,718	150,000	9,324	40,000
Robbery/theft	48	0.017	30,787	300,000	34,283	200,000
Unemployment due to illness	126	0.044	8,323	60,000	5,497	50,000
Death of cattle	166	0.058	9,674	100,000	6,475	20,000
River/land erosion	63	0.022	165,726	4,000,000	2,375	5,000
Flood (house/homestead damage)	180	0.063	6,421	100,000	5,893	75,000
Large expenditure due to Disease	530	0.186	10,997	250,000	10,821	205,000
Loss of money	88	0.031	38,429	324,000	33,776	200,000
Land related litigation	45	0.016	30,349	200,000	25,648	200,000
Dowry related harassment	162	0.057	40,702	750,000	33,643	120,000
Marriage exp. for daughter	416	0.146	32,328	250,000	32,255	400,000
Households reporting no crisis	**1294**					
Total Number of Households	**2842**					

Source: BIDS-PKSF Survey, 2004-5, authors' calculation

pattern in the case of health shocks. In Duflo's sample, the top 1% health spenders incur on average $230 per capita per month on health, while the largest spender in the PKSF sample spend about $300 per month. Figure 1 below illustrates that in the PKSF sample there is high variability in health expenditure; while 10% of households account for 88% of total health expenditure, 46% of households cause nearly the entire health expenditure over a 5-

year period. Similarly in the Indian survey, 10% of individuals are found to account for 80% of total health expenditure. Duflo also finds that households on average appear to spend around 7.4% of monthly budget on health. Further, health is a 'luxury' good, i.e., per capita monthly health spending has a wealth elasticity of 1.2. It can therefore be claimed that large health shocks affect very few, and thus in principle, the prospect to risk pooling is very good and the health risks are in principle insurable.



(e) Financing Health Shocks: In the sample of 2858 households, though 530 (i.e., 19%) reported large expenditure due to illness, detailed data is available only for 493 households. About 47% of these latter households (actually 242) had to spend their entire (liquid) savings, and 4% took loan with high interest in response to the crisis (Table 5). A combined group of 7.3% of these households also sold or mortgaged land or sold cattle, each of which has significant implications on their income earning ability in subsequent periods. These figures provide palpable evidence how health shocks may lead to poverty.

In the Udaipur sample, both credit and asset sale also played important roles. While access to credit is seen in a positive light for the poor, the same cannot be said when borrowing is for health, which may turn out to be unsustainable. However such borrowing is frequently rather high. Among households who spent more than INR 500 at once on health, 46% borrowed money to finance the expense. Even worse, the interest rate on health debt was much higher (59%) than for other loans (8% per year) since almost no one in the sample had access to microcredit. High relative debt of this scale may well be unsustainable[10]. Selling Assets was also frequent; among households who spent more than INR 500 at once on health, 13% sold assets to finance the expense. On average, it would therefore seem that the Bangladesh sample would have less vulnerability to poverty than the Udaipur sample.

[10] In the Udaipur sample, nearly 70% had access to credit, of which 21% had health-related debt, and for these households, the health debt stood at 64% of total debt. Put another way, the average value of per capita health debt was about USD 45, which is 2.08 times the average monthly consumption per capita in the sample.

Table 5: Financing Health Shocks: How Large Health Expenditures were met

			Expenditure for coping with the shock	
How did you face the crisis?	**Frequency**	**Percent**	**Average**	**Max**
Cannot overcome the crisis	25	4.8	6,220	14000
Expend entire savings	242	47	11,488	205000
Sold land	11	2.1	36,600	119000
Sold other durable asset	11	2.1	7,023	17000
Took loan with high interest	21	4.1	5,289	29280
Took loan with reasonable interest (<10%)	4	0.8	3,000	5000
Took loan without interest	32	6.2	12,203	200000
Got support of influential person	2	0.4	14,000	20000
Mortgaged permanent asset	16	3.1	12,170	30000
Assistance form relative/friends	10	1.9	11,550	45000
Sold livestock	9	1.7	5,588	16000
Loan taken from bank	2	0.4	5,100	5100
Savings/loan	44	8.5	10,118	100000
Saving & sold permanent asset	7	1.4	16,586	40000
Assistance/help from relative	31	6	8,513	30000
Loan from NGOs	26	5	5,712	20000
Total	**493**	**96**	**10,000**	**10000**

Source: BIDS-PKSF Survey, 2004-5, authors' calculation

(f) Disease Probability Profile: Among 2,842 households (N) who had exposure to some shocks over the preceding five years, there were altogether 1,832 medical incidents (n), mostly of a routine nature. However, there were at least 499 episodes (covering 15 health conditions) that were fairly serious, which involved a visit to the doctor, medication or even hospitalization. In the insurance parlance, these may be referred to as 'catastrophic' events. As seen in Table 6, the most common occurrences were diarrhoea (113), child birth (72) and tuberculosis (TB, 62). However, even these events occurred only with a probability of between four and two percent, that is, a given family had four percent probability of catching a serious diarrhoea over a 5-year horizon. Ex-ante these probabilities appear on the low side, which may in part result from the fact that the 5-year recall may underreport events of this type.

(g) Medical Expenditure Profile: The same 499 health events are further analyzed in terms of the detailed expenditure incurred by the respondents (Table 7).

(i) Doctor's Fees: Insofar as doctor's fees are concerned, among the 15 health conditions identified in Table 6 above, the average outlay ranged between BDT 263 (malaria) to 1,676 (diabetes), the average of these averages being BDT 732 per event. Even this figure

exceeds the typical annual cost of family coverage in most MHI pilot programs in South Asia, in exchange of which the insured usually obtain either free medical consultation or on payment of a nominal charge.

(ii) Drugs & Tests: Average expenditure on medication and pathological tests is the category of expenses which is the most burdensome on the victims. Here the average figure ranges from BDT 754 (diarrhoea) to about 7,000 for amputation of limbs or diabetes. Again the average of the averages comes to BDT 3,359. The Grameen microcredit borrowers who are insured under Grameen Kalyan's (GK) insurance scheme usually get 25% discount on tests and medication, but the GK test fee structure is about 50% of the market rate.

Table 6: Frequency Distribution of Serious Medical Incidents

Medical Incidents	Frequency (%) n =1,832	Prob. (per hh, %) N =2,842
Amputation (arm and leg)	13 (0.71)	0.457424
Blood Pressure	51 (2.78)	1.794511
Child Birth	79 (4.30)	2.779733
Diabetes	20 (1.09)	0.70373
Diarrhoea	113 (6.17)	3.976073
Eye Disease	29 (1.58)	1.020408
Fracture (arm & leg)	25 (1.36)	0.879662
Gall Stones	9 (0.49)	0.316678
Heart Disease	35 (1.91)	1.231527
Malaria	11 (0.60)	0.387051
Rheumatism	8 (0.44)	0.281492
Tuberculosis (TB)	62 (3.38)	2.181562
Typhoid	38 (2.07)	1.337087
Uterectomy	5 (0.27)	0.175932
Pneumonia	1 (0.05)	0.035186

Source: BIDS-PKSF Survey, 2004-5, authors' calculation

Table 7: Health Expenditures

Medical Incidents	Frequency (%) n= 1,832	Doctor's fees (average)	Cost of medication & tests (average)	Average expenditure if admitted to hospital
Amputation (arm and leg)	13 (0.71)	800	7,370	1,467
Blood Pressure	51 (2.78)	779	2,473	1,733
Child Birth	79 (4.30)	1,129	3,026	3,691
Diabetes	20 (1.09)	1,676	6,783	NA
Diarrhoea	113 (6.17)	241	754	1,083
Eye Disease	29 (1.58)	568	2,032	4,050
Fracture (arm & leg)	25 (1.36)	375	1,913	700
Gall Stones	9 (0.49)	1,475	5,883	2,050
Heart Disease	35 (1.91)	1,113	3,785	13,755
Malaria	11 (0.60)	263	1,707	5,000
Rheumatism	8 (0.44)	553	2,636	NA
Tuberculosis (TB)	62 (3.38)	273	1,013	NA
Typhoid	38 (2.07)	643	1,290	NA
Uterectomy	5 (0.27)	788	4,250	3,000
Pneumonia	1 (0.05)	300	5,475	NA

Source: BIDS-PKSF Survey, 2004-5, authors' calculation

(iii) Hospitalization: In 5 of the 15 health conditions, the respondents in this sample did not require (or choose) hospitalization (e.g., for diabetes, pneumonia, rheumatism, TB and typhoid). For the remainder, heart disease claimed the largest average outlay, BDT 13,755, while for fractures, hospitalization costs were only BDT 700. Though the average of all 'average hospitalization costs' come to BDT 3,653, not much higher than for 'medication & tests', the range is much wider here. The average hospitalization charges for heart disease are nearly four times the average figure for the ten health conditions relevant in this sample. In terms of actual MHI schemes in Bangladesh, GK covers up to BDT 3,000 worth of hospital coverage (external clinics), a figure that is likely to be deemed most inadequate from an insurance perspective. Sajida Foundation, on the other hand, charges a higher annual premium (BDT 600 vis-à-vis 200-300 for GK), but offers a greater range of services, including an elaborate list of surgeries for which the insured have to contribute up to maximum of BDT 4,000 as co-payment.

(h) Aggregate Willingness to Pay: Not unexpectedly, financial constraints prevent some from seeking medical treatment; of the 77% of individuals in the sample who reported being sick, only 44% sought 'professional' care. Around 34% of these non-treated individuals reported lack of money as the cause for not seeking treatment. Thus about 19% of those falling sick do not obtain treatment due to poverty, though one would imagine that many of these episodes were possibly of a routine nature than 'catastrophic'. In any case, the question remains if the above data reveal much about the willingness on the part of the poor to pay for health. It is seen that the least costly mode of treatment is to go to a sales person in a local pharmacy, where the principal expense would be just the cost of drugs (and possibly some tests), and the average expenditure here is BDT 233, which rises to 384 if the consultant is a 'paramedic' and 439 for 'village quacks'. Homeopathic treatment is very economical, the average costs (including tests & medication) being BDT 245. Assuming that the low-cost routes are mostly followed by the less well to do, these observations would suggest that great many individuals would be prepared or spend at least BDT 200-400 for essentially routine treatment, i.e., something in the range of 1 to 2 percent of the average income of a 'poor' family (i.e., those living just below poverty line), which matches the sort of evidence that has been reported in the literature (Dror et al, 2007a and Duflo, 2005). Average willingness for the poor more generally would of course be much higher in absolute terms, but the above survey data do not tell us anything more precise, pointing to the necessity of obtaining greater details in order to undertake further analysis.

5. Role of Micro Health Insurance (MHI):

Despite evidence of long run viability of healthcare insurance services, commercial insurers have been reluctant to operate in this market. Concern over short run profitability in the face of unfamiliarity with the concept of health insurance perhaps acts as a main deterrent for insurers. There is also a more fundamental issue, namely whether the actuarially fair premiums are likely to prove unaffordable for some of the targeted population. Besides absence of adequate health related data for actuarial calculations, moral hazard, adverse selection and the difficulty of controlling fraudulent activities may also contribute in restraining the entry of registered insurers.

There are however many pilot type micro health insurance schemes in operation all around the world, where India offers a large variety of experiments, but few are judged to be offering high quality coverage or are deemed to be of long-term viability unaided (e.g., Dror, 2007a). Yet a review of the existing plans suggests a low uptake of health insurance by the poor.

Demand may not be the bottleneck as Dror et al (2007a) found that even the very poor were willing to pay between one and two percent (median being Rs. 560) of annual household income in premium, rather high figures in view of actual rates in force in typical contracts. The most common reason for consumer apathy to insurance cited by field-level workers is that these products are ill designed to be of appeal to the public. Most writers on the topic agree that a workable insurance scheme in this context (i) must encourage primary preventive care (covering doctor's fees, tests and prescribed drugs), (ii) in the therapeutic area, it may cover only major risks (i.e., thus minimizing moral hazard), (iii) make provision for an emergency fund to deal with occasional premium delinquency due to identifiable aggravated incidents on the part of the insured, (iv) secure re-insurance, (v) must provide health education, and (vi) it must be affordable. Microinsurance Academy (MIA) also suggests adding two more criteria: (vii) extend coverage to communities rather than individuals, which achieves within group risk-pooling, and guards against adverse selection; (viii) the plan be tailored to meet the evident needs of the community in question (e.g., using MIA's decision tool, Choosing Health Plans Altogether (CHAT).

Though most microinsurance products in Bangladesh relate to a mix of credit and credit-cum-life risks, there are a large number of MHI products on the market as well. A brief overview of some of the more well-known schemes is in order.

Grameen Kalyan, in Bangladesh, has launched micro health insurance since the late 1990s and presently is the largest program in the country covering nearly half a million people. Its premium is between BDT 200 (Grameen Bank, GB, members) and 300 (non-GB members) per year and it operates 39 clinics in ten districts in Bangladesh, and plays both the roles of insurer and of direct service provider. Insurance coverage (for all members) includes free annual check up for the head of the family, immunization against common diseases as well as discounts on various services. For drugs, the insured gain a discount of between 25 (basic) and 10 percent (other). Similarly for laboratory tests, the discount varies between 30 to 50%, while for external hospitalization the insurer commits up to BDT 3,000 of expenses.

In 2008, the number of member GB patients rose to 238,007 while there were an additional 78,624 non-GB patients served under the health pan. The premium income is seen to have covered 83% of the direct operational cost of the health program. However, the program is still in the early stages with a limited geographic coverage, a limited range of products, and does not have external linkage with dedicated clinics for referral or emergency treatment that cannot be accommodated in its own facilities.

Sajida Foundation, another major provider of health insurance in Bangladesh with about 72,000 semi-urban families as members, also provides the service directly. Per family premium is BDT 600 (up to 5 members, BDT 200 per additional member) annually for a fairly exhaustive list of services. A number of services (e.g., inoculation against major diseases, annual check-up for the family head, normal child deliveries) are offered on a gratis basis to insured members. It also offers a 50% discount on test fees, and the insured only pays between BDT 2,500 - 4,000 for various surgeries, where all treatment is done in its own facilities. In other words, unlike GK or BRAC, the maximum liability for the insured is limited in this scheme. In 2007, it served about 140,000 individual patients under the standard health insurance program; which was expected to have reached about 170,000 in 2008. The same organization also offers additional health coverage to targeted groups as well as life and accident coverage.

Ganoshashthya Kendra (GSK) introduced a micro health insurance plan back in 1975, among the earliest anywhere, which is offered through 10 health centers primarily in urban

(or semi-urban) locations. The premium structure is highly differentiated according to the socio-economic status of the insured; but all receive the same care. While financial data is not publicly available, for example, eligible drugs are given free to the 'very poor', who also pays mere BDT 5 as consultation fee each time they need service. The general premium and co-payment structure appears to be at the low end of what is seen throughout South Asia. Clearly without additional information as to the extent of membership and actual services rendered, it is not possible to have an overall impression of how effective this program has been.

Finally, let us note that BRAC Bangladesh has introduced a pilot MHI in 2001 in two rural locations with financial and technical support from ILO. It has a general package as well as one for the 'ultra poor', and separate targeted programs for school children and for pregnancy care. The premium structure of the general package varies from BDT 100 to 350, again differentiated as to the poverty status, and most services are offered on a discount basis (e.g., 25% off test fees) at its own facilities. In addition a limited cash payment is made available to the insured upon referral to external providers much as in the GK plan described earlier.

The programs reviewed above typically exhibit a very high co-payment for most services rendered. For example, it is standard to offer only a 10-25 percent discount toward medication. In case of referral to external facilities, the insurance plan only covers a pre-set amount toward the cost of treatment (typically surgeries or specialist care in an urban hospital). These pre-set limits are also rather low given the average cost of hospitalization in urban areas. These features suggest that in a strict sense these are not really insurance products since the insured appear to carry bulk of the risk that may befall them, and, ironically, it is the insurers who bear only limited risks (Sajida Foundation being an exception). A major challenge in providing meaningful health policies in rural Bangladesh appears to be the shortage of qualified personnel, and the consequent risk of delays (due to rotating staff among health centres) or even discontinuity of some services altogether in a given location. In any case, a full evaluation of the performance of these MHI programs and the scope their country wide replicability would be a high priority. Of course, if these insurers had recourse to reinsurance, they would be able to shoulder larger challenges. The next section deliberates on the challenges that various pilot type MHI programs appear to face in the developing world including issues of program design, premium setting, delivery modality and an enabling regulatory framework.

6. MHI Program Challenges:

While moral hazard and adverse selection due to asymmetric information at the disposal of the buyer and seller are the standard obstacles to the viability of an insurance market in general, in a developing country context, these also take on additional nuances. Moral hazard gets exacerbated due to difficulties of verification and the inadequacy of the formal legal framework (Ray, 1998). Further, preponderance of agricultural and self employment activities among the poor are often pointed out as a roadblocks to implementing good adverse selection strategies. Designing an appropriate health insurance scheme for a particular group of people is a complicated task even in the best of circumstances. The above cited issues would have significant bearings on questions as to the type of health risks to be covered, the extent of coverage, and on the modalities for co-payments and deductibles. Below we review how these and related bottlenecks may be addressed in designing feasible micro health insurance products in a developing country context.

(a) Awareness & Demand: It has been universally observed that *risk-pooling* and *risk-shifting* ideas, particularly that in the health context, are poorly understood by the target population. It is typically noted by field researchers that the necessity of having to pay a premium even if no illness (and hence no claim) had occurred is difficult to communicate to the poor, who appear to attach much higher priority to spending money on more pressing needs. The low renewal rate in the Bangladesh context needs to be highlighted, where for example, the 'renewal within one year of due date' stood at 44% in BRAC is not atypical of the industry (Ahmed at al, 2005). The apathy may reflect unhappiness with the service, high deductible and co-payment, financial hardship on the part of the insured or any combination thereof. The following are some ideas on how to ameliorate the demand situation.

Communication: The idea that insurance benefit (i.e., indemnity) is payable only when a pre-specified contingency should occur, and that access to this right is a commodity deserving of pecuniary sacrifice ought to be the central message that insurers and MFI/NGOs has to communicate to the target population. The challenge lies in communicating this message in plain language using whatever medium happens to be feasible and cost effective (Ahsan, 2009).

Liquidity: Should liquidity constraint be an important obstacle in subscribing to insurance as is often reported to be the case, a short-term escape may exist *if the potential insured are also recipients of microcredit programs and if the health (or any microinsurance, for that matter) premium can be formally added to the loan amount offered by the MFI in question and transferred direct to the insurer*[11]. In the GK case, this option is in part available in the sense that they are allowed to transfer the premium money from their savings account held by Grameen Bank, although it is unclear if the insured can and do request a debit from the current disbursement of microcredit. More frequent premium payment option is usually expensive administratively, however if these can be done automatically via a savings account or by directly debiting periodic loan disbursements, such ideas may also be tried out on an experimental basis.

Timing of Services: The concept of risk shifting aside, the fact that the premium has to be put up at the start of the contract, while the benefit claim can only take effect upon the occurrence of an eligible illness, the non-synchronous timing of the two processes is believed to create an indifference on the part of the poor to subscribe to insurance. It may be necessary to build-in meaningful 'quid pro quo' features in the design of the insurance contract. A simple and cost-effective means may be to offer an appropriate annual physical examination (with the protocol designed according to age/gender/self-identified health status etc) with laboratory tests, if relevant, at the very start of the insurance coverage. By detecting pre-existing conditions, this screening may also serve as an effective preventive device to warn of condition in their early stages, thus obviating major expenses down the road. If the contract has a rider that excludes or limits coverage for certain pre-existing conditions, these too can be effectively dealt with at this stage.

(b) The Scale Issue: Unless the insured population is very wide, it would be hard to pool risks effectively. Thus while MFIs themselves serve as insurers, as is the trend in Bangladesh, they ought to have national presence to achieve both the required scale as well as regional heterogeneity in order to target cost efficiency.

[11] Here the existence of a functioning microinsurance regulatory authority may help matters. The regulator can for example review the insurance products marketed by recognized (e.g., registered) providers, and once these are approved, regulation may be instituted that all recognized MFIs and other financial institutions offering microcredit will be directed to approve, if relevant, the addition of the annual microinsurance premium (credit, health, livestock or property) in determining the aggregate loan amount. One may also wonder if setting a limit on such a premium add-on (say, to a maximum of 10 percent of the original loan) may put a competitive pressure on the industry to cut insurance premium.

(c) Delivery Channel: Of the popular delivery modes, namely, (i) the partner-agent model, (ii) the community-based model, (iii) the full service model, and (iv) the provider model, the Bangladesh experience in the health context is primarily the adoption of the last (e.g., BRAC, GK, GSK, and the Sajida Foundation). Here the health care provider is also the risk-carrier, in contrast to the full service ('insurer') model where the two activities are separated. The Indian regulation has however compelled registered insurers to opt for the partner-agent model, where the former team up with one or more NGOs/SHGs to 'sell' insurance as agents, where the service providers may be NGOs themselves or designated health facilities chosen by them. The role of SHGs/MFIs may prove critical when it comes to parting with premium money in advance from the poor household's perspective because of prior credit relationship. Another major advantage of the partner-agent set up is that the service providers may concentrate on their respective duties without having to worry about risk management themselves. The difficulty with the adoption of the provider model by MFIs is that, except for national level players such as Grameen and BRAC, their own financial and logistical resources may not be adequate to offer coverage to a suitably large number of the insured in order to pool risks effectively, and at the same time, set up well-equipped health centers wherever coverage is in effect. Smaller programs are likely to prove cost-ineffective in general, which is apparently borne out by the observed evidence in the Bangladesh context (Ahmed, et al, 2005).

(d) The insurance-credit linkage: The linkage between credit and insurance has been discussed extensively by many writers. The common idea is that if MFIs were to be materially involved in the insurance program (even as mere facilitators), it becomes easier for the insurer to earn the confidence of the potential insured. MFIs already have in place the network of offices, human and other resources and by virtue of their past activities, have gained trust of the villagers, borrowers and non-borrowers alike. Thus Pauly has commented that "community-based insurance or insurance combined with other trusted financial organizations can be a way of generating trust" (2008, p.1018).

However the above remark does not fully characterize how MFIs may be involved in the provision of insurance. Over and above the idea of MFIs advancing the insurance premium as part of annual microcredit as proposed above, an alternative linkage between credit and health insurance may be to run both innovatively (regardless of the delivery mode chosen). Here the idea is that an MFI would stand ready to offer a line of 'health credit' to the insured who may draw on the credit line as needed to cover the deductible and the co-payment if and when these are incurred[12]. The ceiling of the credit would thus be a pre-determined figure defined by the insurance contract[13]. Clearly for this scheme to be functional, the insurance policy must have the feature that the insured's maximum liability is set in advance by the co-payment rules (e.g., as in the contract offered by Sajida Foundation). While the details of such a scheme has to be thought through with care, for the present, it ought to be noted that the modality and experience required for successful operation of microcredit need not be sufficient to run a cost-effective MHI product. For this and other reasons, as Ahsan, Barua and Tax (2009) have suggested, the two activities of MFIs ought to be formally segregated even if the package is offered in a 'provider model' arrangement.

(e) Marketing Insurance: Marketing of health insurance and awareness building would appear to go hand in hand. Thus it is no surprise that programs currently in operation in

[12] The health credit without an insurance framework would I appear too risky from both sides. Besides that would be a simple credit program, and some individuals (typically excluding the poor) may have access to such privileges.

[13] We credit Ludwig Ressner (U of Munich) for this idea.

Bangladesh typically employ volunteers to sign up new members. This may be an advantage since these volunteers represent the parent NGOs and, for reasons of trust and familiarity, it is unlikely that external sales people (e.g., insurance industry representatives) would do as well. However, if it comes to explaining the underlying rationale of insurance, a valuable role can be played by microinsurance professionals, though the process would probably have to be intermediated by MFIs and be done at their behest. Thus if commercial insurers want to be in the business, it will be hard not to involve MFI/SHGs in one capacity or another.

(f) Adverse Selection: At present none of the Bangladesh schemes appears to incorporate any deliberate attempt to guard against adverse selection, indeed as Ahmed et al note (2005) such an approach would be against the very mission of many of these organizations. Compulsory membership is one obvious mode; however, even here the observed behaviour indicates that renewal rate of membership is not uniformly high, and indeed falls significantly below 100 percent of the credit recipients who are nominally expected to sign up fully. More problematic case is that of non-members of the credit program since most insurers allow them to sign up (on a voluntary basis) thus allowing free reign to adverse selection. While these non-members are charged a higher premium and/or fees against services provided, the higher rates are supposed to cross-subsidize either (i) the offering of free coverage to the ultra poor as is sometimes the case (though not in the GK plan), and/or, (ii) the core insurance operation. However, in the absence of detailed evidence, one is unable to test the hypothesis that the voluntary nature of the coverage offered to non-members inflicts higher than average costs to the insurer due to adverse selection on the part of this group. In other words, it is not obvious what degree of cross-subsidization is being actually achieved on account of higher fees charged of non-members.

Thus in effect the only mitigation of adverse selection that is generally practiced in Bangladesh is via the family membership and by placing restrictions on the magnitude and/or the frequency of major allowable claims on a per-family basis. No doubt family coverage is a very effective device which is practiced widely (Duflo, 2005), but additional measures may well complement the drive to contain costs of program delivery. In some village-based Indian programs, if a majority of the village households vote to adopt an insurance scheme, it is made obligatory for all villagers to subscribe. However even here one may face enforcement challenges. Another approach that has been proposed by some analysts is the offering of micro health insurance on a group basis such that even if the program is compulsory for all villagers, the benefit claims (especially for costly events such as major surgeries /hospitalizations) are rationed on a group-basis (e.g., only one covered episode per year for a group of 5 members.)

(g) Premium Structure and Moral Hazard: Arrow (1963) and Borch (1960) established some fundamental theorems of insurance contracts. Essentially these state that even though most health events are idiosyncratic, on account of interdependence of risks due to epidemics and the like, a small premium 'loading', i.e., setting it a little higher than the actuarial value would be necessary. Further if the insurer is risk-averse, the Pareto-efficient contracts will involve some co-insurance, i.e., the maximum coverage will be a fixed percentage (below 100) of the insured value beyond the deductible. Optimal contracts may thus embody a deductible and a co-insurance figure. The loading of the premium would also be warranted in view of the issues of administrative costs and the opportunity costs of capital tied up in reserves. The deductible essentially helps prevent frivolous claims, which may otherwise tie up scarce administrate resources, while co-insurance can succeed in controlling the incentive problem created by moral hazard. Peer monitored group or community level coverage would add another element dampening the risks of moral hazard.

We have already commented above that presently the co-payment structure in Bangladesh MHI plans runs very high. It is typical for the insured to shoulder up to 90% of the costs of medication, 75% of test fees, 50% of normal child birth costs, and essentially unlimited amounts for catastrophic events like surgeries and specialist/intensive care. These features rob these programs of the purpose of insurance. As Arrow (1973) remarked, if the coinsurance exceeds 25%, the insurance principle is lost. Ideally for catastrophic events, the coinsurance ought to be allowed to go to zero.

The premium design of the above cited plans also does not include the administrative and office overhead costs in setting the premium. As a result, most programs in the health area that exist in Bangladesh happen to incur substantial operating losses. For example, Ahmed et al (2005) report that in 2004, policy premium revenue covered a mere 36, 22 and 4 percent of total program expenses for GK, BRAC and Society for Social Services (SSS), respectively.

(h) Claim Management: The determination of an insured event ought to be transparent and fast, which are often found to be the pre-conditions of program acceptability on the part of the insured. In terms of settling a claim, it usually turns out to be less costly if the frequency of cash transactions are kept to a minimum. The latter goal can be achieved in the following manner, which also happens to be the practice in the leading MFI-run provider plans in the country. In case the treatment is in-house (e.g., in the local health centre managed and owned by the insurer), the insured need only bear the co-payment in order to receive the service. If the treatment involves visit to a referred facility, it would be ideal too for the insured only to part with the co-payment at the time of service delivery. The referral unit may later settle the claim with the insurer according to pre-arranged modalities. To the extent, any reimbursement of eligible expenditure incurred is due to the insured (e.g., emergency care provided in a remote location by a third party), these ought to be swiftly processed and payment made in short order. The latter is rare for both BRAC and GK, where only one percent of the events are referred to third parties.

(i) Role of Subsidy and Endowment Fund: As is well-known Grameen bank had initially lent an endowment fund (of USD 42.5 million) to GK to initiate the health program, and while this fund was eventually returned to the parent company after several years, GK retained the substantial interest income it had earned in the meantime (1996-2002). The latter has since served as the 'capital fund' of GK to which recently some additional donor money has also been added on an intermittent basis (e.g., the ILO-WEED program). Thus in GK's case, there is substantial investment income from the capital fund accruing to the health program on a regular basis. Most other programs rely on periodic contributions by private entities and external donors. Ahmed et al (2005) suggests that the proven success of the GK scheme may be replicated in the case of other promising programs.

However, Ahsan, Barua and Tax (2009) propose a key criterion that any subsidy regime must respect, namely that the provider fully retain the incentive to minimize the cost of service delivery to better match the affordability of the poor, which rules out any provision for direct premium subsidy for an indefinite period. They also endorse the idea of a capital subsidy so long as the donor or like funds are utilized for true capital costs only.

(j) Covariant Risk & Reinsurance: None of the existing MHI plans in the country allow for a contingency arrangement to deal with covariant risks. Extraordinarily large claim scenarios are however precluded by the current design of the policy that limits the insurer's contribution in case of hospitalizations and/or services rendered by external providers, which implies that the co-payment pattern is essentially deterministic, while allowing for the

major risks to be shifted onto the insured. Thus in the present scenario, the reinsurance issue is not of major significance unless the plans change drastically by widening the scope of risk bearing by the insurer.

(k) Gender Dimension: The historical bias against rural women's access to formal health care has had a significant impact on all measures of female health, namely post-birth illnesses, still birth, maternal mortality, gender bias in underweight babies and under-5 mortality is well recorded (e.g., Sen, 1999). If the female is the primary insured (e.g., the owner of the health card), and the rest of the family is covered through her membership, this feature alone goes a long way in enhancing female empowerment among the poor, particularly in rural areas. Thus to restore balance in the typically unequal status of women in rural societies, many writers suggest using females as the primary member in representing a family (Ahmed, et al, 2005 and Duflo, 2005).

(l) Staff Knowledge: Most programs appear to be run on a trial-and-error basis; indeed managers running these programs are not particularly trained as microinsurance experts, and they do not appear to engage any insurance/actuary professionals in the design or management of their programs (Ahmed et al, 2005). Given this lack of background, it may indeed be challenging for them to adjust their product design features efficiently in response to behavioural response of the insured. MIS and various performance monitoring chores will also remain underdeveloped unless more professionals are engaged. Adoption of appropriate office technology and computerization of member records are also an immediate priority.

(m) Regulatory Issues: Health is one area where a suitable regulatory framework specifying which elements of coverage an insurer may offer would be an important point of departure. In effect the product design and its inherent flexibility would still be up to the insurer to devise, but each has to respect the guidelines as those set out, for example, in the Indian context by IRDA, though the latter is not without shortcomings (Dror, 2007a). Ahsan, Barua and Tax (2009) recommend a set of regulatory guidelines that include the broad parameters of what an eligible microinsurance product is, such that only eligible products may be marketed by microinsurers (MFIs, SHGs or registered companies jointly or in collaboration with each other). These directives also deal with issues of the duration and scope of coverage, dichotomy of life vs. non-life products, separation of credit and insurance activities, capital adequacy and prudential guidelines, design, accumulation and investment of the reserve fund, policy delinquency, audit and supervision. They hasten to add that not all such guidelines need be binding on the fledgling industry at one go, but rather phased in a progressive manner as the market matures. Absent an efficient mode of regulatory control, private insurers may only offer coverage that is a priori profitable and does not achieve much socially necessary risk-shifting.

7. Conclusion

Health risks are unpredictable as to occurrence, as to the severity of impairment, and in terms of the costs these inflict on the victims (both in terms of medical care and foregone earnings) and society at large (i.e., via health externalities). In spite of advances in microcredit and evolving societal institutions, the effective coping mechanism for the poor is often to rely on self-insurance, leading to exhaustion of savings (cash or in kind) or loss of capital. Consequently, health shocks can trap vulnerable households indefinitely into poverty cycles. Given the weak state of the public health system in many developing countries, promotion of market provision of micro health insurance would appear to be the only realistic alternative for public policy in such a context. This can be done by strengthening the legal system thus facilitating contract enforcement as well as by creating an enabling regulatory framework for the microinsurance industry to flourish.

A brief survey of household data for both Bangladesh and India (where no market insurance was available) reveals that large health shocks affect very few, and thus in principle, the prospect to risk pooling is very good and the health risks are in principle insurable. Reviewing the expenditure profile and assuming that the low-cost routes are mostly followed by the less well to do, it appears that great many individuals would be prepared to spend something between 1 to 2 percent of the average income of a 'poor' family for essentially routine treatment, which matches the sort of evidence that has been reported in the literature (Dror et al, 2007a and Duflo, 2005). Many believe such a contribution range is adequate to finance a well designed insurance plan in rural areas.

While commercial insurers have been reluctant to enter this field, many NGO/MFIs and SHGs have been operating pilot type MHI programs in both Bangladesh and elsewhere for over a decade now. A review of the Bangladesh programs shows that these typically exhibit a very high co-payment for most services rendered so much so that the bulk of the risk is borne by the insured, while ironically, it is the insurer who faces a limited liability. This feature, strictly speaking, robs these plans of the insurance principle.

Designing an appropriate health insurance scheme for a particular group of people is a complicated task even in the best of circumstances. However in the developmental context even the standard issues of moral hazard and adverse selection take on additional nuances in view of the weak legal and governance structure, preponderance of agricultural and self employment activities and weak actuarial data. The above cited concerns have significant bearings on questions as to the type of health risks to be covered, the extent of coverage, and on the modalities for co-payments and deductibles. The paper develops a set of guidelines detailing how these and related bottlenecks may be addressed in designing feasible micro health insurance products in a developing country context. In particular the discussion focuses on topics such as the awareness and demand for insurance, the scale issue, delivery channel, adverse selection, credit and insurance linkage, moral hazard and the premium structure, claim management, endowment fund and subsidy, gender issues, covariant risk and reinsurance, and efficient regulation.

However, much more is needed to be done to learn better about the products that the poor would find truly beneficial and for which they are willing to bear the actuarially fair costs of insurance. Such tasks can only be attempted with a better panel data set that is dedicated to the central issues of health shocks and the available coping modalities. Over and above revealing the pattern of health shocks in the population, the data must contain evidence of possible income smoothing and consumption smoothing institutions available in rural societies and among the urban poor. Additional tests may also be necessary to induce the potential insured to reveal their preferences among the types of health coverage and the willingness to pay for these.

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The Institute of Microfinance (InM) is an independent non-profit organization established primarily to meet the research and training needs of national as well as of global microcredit programs. Initiated and promoted by Palli Karma-Sahayak Foundation (PKSF) on November 1, 2006, the Institute is principally funded by UK Aid, Department for International Development (DFID) through its Promoting Financial Services for Poverty Reduction Program (PROSPER). InM has an excellent team of professionals in research, training and knowledge management. The regular core research group comprises well coordinated and dedicated researchers with extraordinary expertise. Besides, InM draws research scholars from reputed universities across the world. The major services that InM provides are research on poverty, microfinance, enterprise development, livelihood promotion, climate change; and impact assessment, evaluation, training need assessment (TNA), curriculum & module development, training on capacity building, training of trainers, scheduled and tailor made courses, training evaluation, consultancy, and program management.

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