

***Why “one-size-fits-all” health insurance products are unsuitable for
low-income persons in the informal economy in India***

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Abstract (195 words)

Limited funding dictates that health insurance for low-income persons would compensate only part of healthcare needs. Existing health insurance products in India are too restrictive to be attractive to low-income & rural populations. We hypothesize that attractive health insurance must represent an optimum match between clients' needs for health care, demand for health insurance, and available supply of health care. Based on data from a household survey among rural poor and urban slum dwellers in seven locations in India collected in 2005, we provide evidence of marked differences across locations in all three parameters: solvent demand for health insurance (proxy: willingness to pay), medical needs (proxy: frequency of illness episodes and the number of days of illness per HH), and the supply of healthcare (proxy: type of healthcare provider and out-of-pocket expenditure on health care). We also show that aggregated expenses of consultations and drugs exceed those of hospitalizations in all locations. We conclude that because the variations in clients' needs, cost of healthcare, availability of services and clients' demand for health insurance across locations cannot be optimized in a single partial benefit package, a context-specific solution is needed to be relevant in each location.

Full text manuscript (3144 words)

Introduction

For the foreseeable future, affiliation to health insurance in India, particularly among low-income persons in rural areas and in the informal economy, will be voluntary, with contribution income as the main source of funding. Due to the limited resources that can be raised from this target population, and the absence of a systematic flow of additional funds by way of subsidies that apply everywhere in India, health insurance will perform cover only part of all essential healthcare needs. Therefore, rationing of benefits is inextricably predictable.

Designing health insurance around a partial package is not a new notion. All the standard packages (insurance products) that have been introduced in the Indian market, notably

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with the view to attracting low-income clients, apply this notion. The question that is raised in this article is whether the prevailing approach to rationing of benefits offers a good fit with the reality of that specific target group.

In 2004-05, the vast majority of the (very small) health insurance market was captured by the four public sector general insurance companies (New India, Oriental, United India and National Insurance) mainly through the standard policies known as “Medicclaim”, “Jan Arogya” and “Critical Illness”. In addition, certain private general insurance companies entered the health insurance market and in 2006 the first company dedicated mainly to health insurance has been launched (Chennai-based Star Health and Allied Insurance Co.) Despite the increase in the supply of insurance volume, there has been insufficient increase in the variety of health insurance products. Most products cover essentially only part of the cost of rare events (hospitalizations & inpatient surgery, with an upper limit), refusing coverage to apply to persons under five years of age (U5) and over 55 years of age (+55) (coverage of the elderly is possible if they maintain uninterrupted coverage from younger age), as well as exclusion of pre-existing conditions (ILO 2005). These products may find their inspiration in western countries, with the notable distinction that Indian health insurers do not apply deductibles, apply risk rating and determine the premium according to the maximum insurance amount, or “cap” (ranging between INR 15,000 and INR 500,000, according to the client’s choice). The main known adaptation of this design to the low-income population (called “microinsurance products”) has been the lowering of maximum cover to as low as INR 2,000. In short, these products were designed by insurance companies “top down”; it is not known what market research preceded this design, or why the products cover these specific risks with the specific caps.

Clearly, this design of health insurance encourages adverse selection in that the combination of voluntary affiliation and personal determination of the cap enables persons to join the insurance when they expect to incur a hospitalization, and adapt the cap to the expected medical costs. Not surprisingly, claim amounts are directly related to the insurance cap chosen by the client. This insurance model is not very interesting with a low cap or for people who enter insurance without expecting a hospitalization, because they can expect a double penalty: once by paying high premiums (relative to the coverage) during periods of no claim, and secondly by having to pay a high share of the cost out-of-pocket high when they experience an unexpected hospitalization with their cap too low to cover the hospital bills. This is one overriding reason why the existing health insurance products are unsuitable for low-income persons, who will have to bear the bulk of the financial risk of illness even if they are insured due to their very low cap, which is out of step with typical hospital bills (as bills are based on the care given rather than the income of the patient or the insurance cap). In addition, insured people experiencing high medical costs that do not however entail hospitalization would also be exposed financially, often beyond their capacity, as most outpatient care procedures are usually excluded from insurance coverage.

The assumptions on probabilities and distributions of risks and costs that were posited in determining the insurance premiums are not published with sufficient detail to allow impartial validation of these assumptions or cross-check with actual cost experience of

the insurer. Thus, a neutral examination of the fairness of pricing of these insurance products is impossible.

It is however possible to state that these products have not gained a large market share for the time being. According to one source, (Gupta and Trivedi, 2004), the number of lives covered by public sector health insurance schemes represented around 1% of the population (or some 10 million persons), plus 0.8 million persons by the private sector non-life companies. And only a minuscule fraction of the insured population is in rural areas or in the informal economy, or among the low-income population.

The Government of India launched in 2004 the “Universal Health Insurance Plan” (GoI 2004) with officially fixed premiums (in the order of one Rupee per day) which were subsidized for lower-income persons. The subsidized lower price notwithstanding, this plan enjoyed a relatively modest uptake among low-income or rural persons (Gumber & Arora 2006). One might surmise that the low-income persons in the informal economy in India cannot be attracted merely by a low price of health insurance, because they also weigh the details of coverage.

Our hypothesis is that in order for the health insurance to be attractive to the market of low-income persons in the informal economy, the insurance product(s) should represent an optimum match between perceived and actual needs of clients for health care, clients’ solvent demand for health insurance, and the available supply of health care. In addition, the cost of covering the risks must be available at any quantity the market could absorb.

Based on data collected through a household survey in 2005 in seven locations in India, we provide evidence that all the three parameters differ significantly across locations, and therefore insurance products must be adaptable to context-specific variations of these parameters.

Data source

We conducted a household (HH) survey in seven locations in India where micro health insurance units operate. The survey questionnaire included, inter alia, sections on HH demographics, education, income, expenditure and self-reported illness episodes in the HH within the three months prior to the interview.

Sampling followed a cross sectional design in a two-stage sampling method: in the first stage, we selected locations purposively, from among schemes that agreed to participate, and which were located in several states (Maharashtra, Karnataka, Bihar, and Tamil Nadu). In the second stage, several villages (or urban areas) within each location were randomly included, and at each village about 20 HH were surveyed. The HH survey included a total of 4,931 HH, representing a total of 24,042 individuals.

Out of the seven locations sampled, only five locations replied to a questionnaire regarding illness episodes that occurred during Feb to May 2005. 3,531 HH were surveyed on illness episodes in the five locations, representing 17,323 individuals, of which 2,204 HH reported at least one illness episode, and some reported more than one; the total number of illness episodes was 4,316 during the period.

The details on the locations are provided in Table 1; locations are denoted in this paper by the Roman numeral assigned to each place.

Table 1: Locations where the household survey was conducted

Location	State	District	Rural	Urban	Total per location
I	Maharashtra	Pune	708		708
II	Maharashtra	Pune		700	700
III	Karnataka	Baihangal	342		
		T Narasipura	358		700
IV	Karnataka	Tumkur	361		
		Kolar	339		700
V	Bihar	Patna	160		
		Vaishali	160		
		Khagaria	180		
		Muzaffarpur		100	
		Nawada	40		
		Begusarai	60		700
VI	Tamil Nadu	Theni	722		722
VII	Tamil Nadu	Chennai		701	701

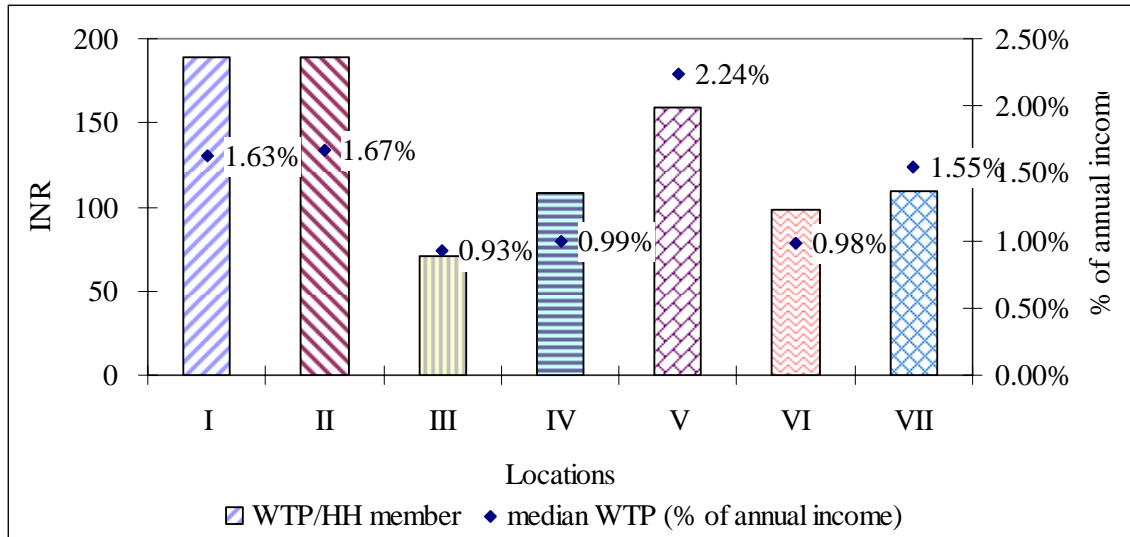
Variations in solvent demand

We quantify “solvent demand” by looking at declared willingness to pay (WTP) for health insurance. In this study, WTP was examined by employing a unidirectional descending bidding game, which identifies the maximal declared amount of WTP. This is explained in detail elsewhere (Dror et al 2006).

The large difference in WTP across locations is striking; a difference of almost two-fold is observed across locations when the nominal values of WTP per HH member per year are compared (highest INR 189 and lowest INR 98). At first sight, these large differences could be assumed to originate from large differences in HH income. However, when the values are normalized for annual income, the large and significant difference remains (highest % of annual income is 2.24%, and lowest is 0.93%, a factor of 2.4).

What could be the explanation for such large differences in solvent demand for health insurance, if HH income is not the explanatory variable? This critical question does not, for the time being, have a conclusive evidential answer. It is possible that people’s trust in the insurer could play a role here, or clients’ satisfaction with providers of healthcare that would be accessible under the insurance package, or another reason. Be the reason(s) what it/they may, the fact remains that the difference in solvent demand for health insurance is far from uniform, and therefore the cost of health insurance, and thus what it can cover, must be adapted to this reality.

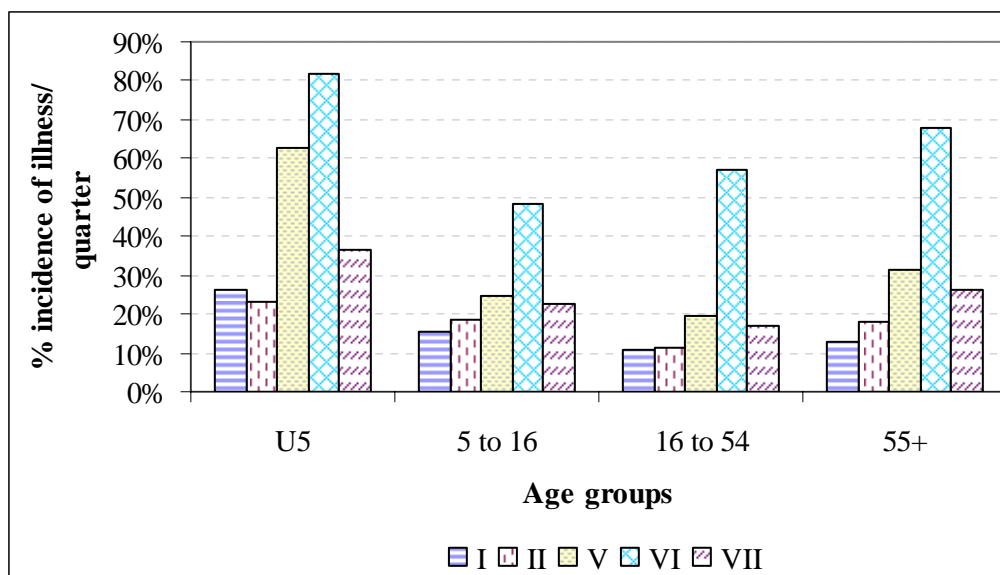
Figure 1: Variations in solvent demand (WTP)



Variations in medical needs

The proxy we use to measure medical needs is the data obtained on self-reported illness episodes (during the three months preceding the survey). We use this proxy because the illness episodes represent the cost-generating events for health insurance. The very large difference in the rate of illness across the locations, among all age groups, is remarkable. Additionally, a large impact of age on incidence of illness is also apparent, with the highest incidence among the under 5 age-group (U5) in all locations, and the second highest incidence (in three of the five locations) among the elderly group (55 years and more) (Figure 2). Needless to say that if the two groups that capture most of the morbidity are not covered by insurance, in part because the morbidity does not require hospitalizations, the exposed population would have little reason to want to buy the prevailing health insurance products.

Figure 2: Difference in incidence of illness of the same age-group across locations



We also looked at a second proxy for medical needs, namely the number of days during which someone in the household was unable to assume normal activities due to illness (during the quarter preceding the survey). This proxy takes account of the different severity of illnesses, and offsets multiple short illnesses against fewer but longer ones. The data is presented in Table 2; as can be seen, the difference across locations is large and significant. The essential message here is that medical needs, seen both in terms of the number of illness episodes and in terms of the number of sickness days experienced by households, differ markedly across locations.

Table 2: Medical needs expressed as days of illness in households (per quarter), across locations

Location	Days of illness per HH per quarter
I	6.6
II	4.0
V	15.1
VI	13.1
VII	7.8

Variations in cost of healthcare

The difference across locations is apparent not only in incidence of illnesses, but also in the financial exposure related to an illness episode. Table 3 contains the average out-of-pocket cost of the main expenses associated with one illness episode. It is recalled that each cost is influenced by the frequency of utilization of a certain service and by its unit cost. The data in the Table reflect the reported out-of-pocket payments made for the different items divided by the number of illness episodes. As can be seen, the difference between the highest and the lowest cost of consultation per illness episode was a factor of

3.1. The difference factor was lowest in drugs (2.3). The largest difference in cost across locations was reported in hospitalizations (a factor of almost 10 between lowest and highest locations).

Table 3: Average cost paid for the main benefit types

Location	Consultation	Drugs	Tests	Hospitalization
I	INR 315	INR 409	INR 174	INR 862
II	INR 177	INR 296	INR 87	INR 416
V	INR 103	INR 520	INR 64	INR 164
VI	INR 189	INR 230	INR 37	INR 88
VII	INR 117	INR 291	INR 86	INR 338
Factor	3.1	2.3	4.7	9.8

The other noticeable revelation from the data in Table 3 is that the average costs per illness episode of consultations plus drugs (which often occur together) exceed the cost of hospitalization per illness episode in four out of five locations. Incidentally, in a different field experiment in which respondents were invited to make choices of their preferred benefit package (Dror et al. 2007), almost all respondents expressed the wish to be insured for drug costs, even though the cost of drugs is different across locations. This suggests that people prioritize coverage for care that aggregates to high costs rather than insurance of only rare care (hospitalizations).

The next exhibit is probably the most relevant expression of variation of the cost of healthcare. The figures in Table 4 reflect the mean cost of medical care (consultations, tests, drugs and hospitalizations) per person at each location. The mean cost is an expression of both the incidence of illness and the associated cost. As can be seen from the results, the differences are considerable across locations (a factor of almost 3 between lowest and highest). The juxtaposition of mean costs of healthcare (Table 4) and the median WTP (Figure 1 above) points to the interesting fact that the expected premium income of health insurance, for which WTP is our proxy, is lower than the current mean out-of-pocket health expenditure. And since the values of both parameters are not uniform across all the insureds or all locations, the insurance package that offers the optimal fit to these parameters cannot be uniform either.

Table 4: Mean cost of healthcare per person, across locations

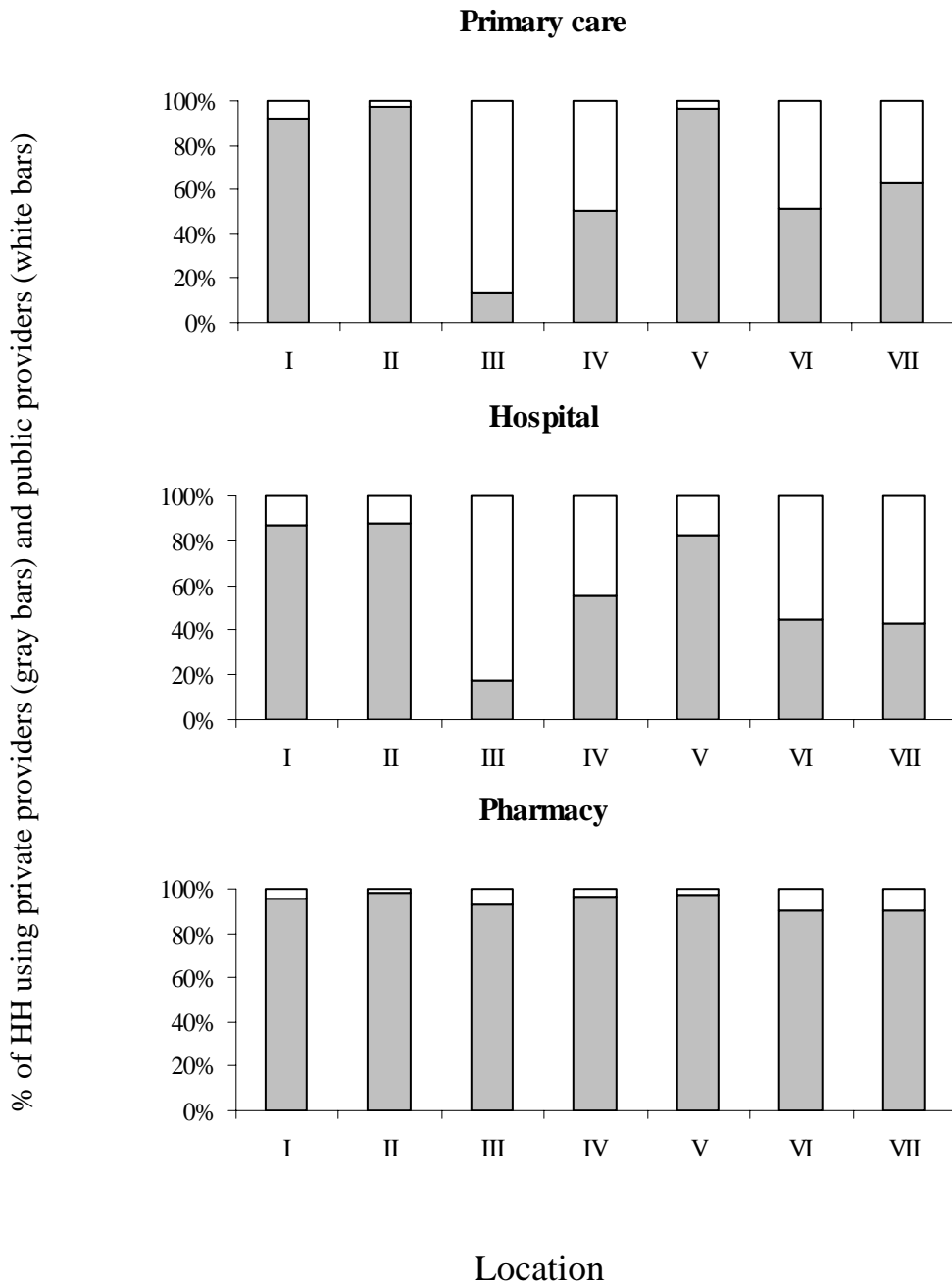
Location	Mean costs per HH member per quarter
I	INR 198
II	INR 117
V	INR 241
VI	INR 349
VII	INR 180

Variations in supply of healthcare

It is self-evident that people would affiliate to voluntary health insurance only if they can access healthcare providers that they trust. In the reality of India, in many places people can choose between public and private providers. In the household survey we conducted in 2005, we asked respondents to identify the type of provider they normally used. The replies obtained are shown in Figure 3. As can be seen in the Figure, the choices people made differed quite a bit across different types of services and locations. Whereas the supply of medicines was drawn mostly from private pharmacies in all locations, primary care was accessed mainly through private providers in four locations and through public providers in one location, with two locations split about fifty-fifty. But when it came to hospitalizations, only three locations reported an overriding preference of private providers, with preference of a public hospital in one location, and a similar proportion of access to public and private providers in the remaining two locations.

The choice of private vs. public provider is usually considered to have an influence on the cost of goods and services; in our dataset, it was reported that the median cost of consultations with private providers was about double the cost of public providers; and in hospitalizations, the median cost of private hospitals was 7.5 times higher than public hospitals. Drugs were also much more expensive in private pharmacies (9-fold). When asked why they chose the provider they frequented most often, respondents explained their choices by prioritizing quality of care and the proximity of the provider over price considerations. Therefore, the insurance must take account of large differences in clients' choice of providers.

Figure 3



Conclusions

This article provides evidence that the perceived medical needs of low-income people living in rural and slum India vary significantly across locations. We assume that the reasons for such large differences are context-specific and multiple. We have seen considerable variability in willingness to pay for health insurance, which cannot be explained solely by variability in income. It has been shown that the burden of diseases is not uniform, either in terms of frequency of episodes of illness or in the recorded number of days of illness in households in different locations. And the cost of healthcare differs dramatically across locations, and some of this difference may be related to the perceived

quality and proximity of providers in each area, which influences the choice people make between seeking care with public or (more expensive) private providers. Our data indicates that the reported out-of-pocket spending on medical services exceeds current levels of willingness to pay for health insurance. This means that unless insurance is heavily subsidized across the board, insurance packages will cover only a part of healthcare costs. We have also seen that the major burden of disease is related to acute illnesses, which can normally be treated on an outpatient basis and with drug regimen; consequently, the aggregate costs of drugs and consultations exceed those of hospitalizations. Therefore, a benefit package that will compensate such costs is more likely to be more relevant in terms of financial protection, and thus attractive to the clients.

Taken together, the multiple variations in clients' needs, the cost of healthcare, availability of service providers and clients' solvent demand for health insurance across locations dictate the need to combine a different optimal benefit package for each location, based on its context-specific parameters. This approach to health insurance product-design is at complete variance with the reality of India's health insurance today. Today, the demand for health insurance is in fact determined by suppliers of health insurance, through the limited set of benefit packages, often determined by insufficient information of the needs, or perhaps by the wish to limit insurers' exposure to risks that are more likely to produce profits.

The challenge in rolling out low-cost health insurance that will enjoy considerable uptake among rural and slum dwellers is to conceive a quick, simple and affordable system of customizing insurance products to suit the context-specific values of the three relevant parameters described above. Such system should make it possible to aggregate risks and resources of many small groups in one large pool, through which the law of large numbers and community rating can be applied, with the view to reducing the cost of risks and passing some of this saving to the insureds in the form of low-premiums without undue limitation of coverage that is prevalent at present.

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