

Eliciting Health Insurance Benefit Choices of Low Income Groups

An appropriate scheme of health insurance must respond to clients' priorities, yet cover a finite and affordable benefit package. A variety of methods have been developed so far to engage the public in prioritising services. This paper deals with a plan that allows variably educated populations who are inexperienced with health insurance to pick health benefits. The decision exercise reported here enhances popular understanding (1) that even within a limited premium there is a choice of different package compositions; and (2) that the level of the premium determines the expectation of coverage by health insurance.

MARION DANIS, ERIKA BINNENDIJK, SUKUMAR VELLAKKAL, ALEXANDER OST, RUTH KOREN, DAVID M DROR

There is a growing awareness that access to healthcare cannot be free-of-charge, due to the low level of government spending on health [Banerji 2005], nor funded mainly out-of-pocket by care-seekers, due to the regressive effect of this financing mode [James et al 2006; O'Donnell et al 2005]. Notwithstanding the view that health insurance is the viable solution [Churchill 2006; O'Donnell et al 2005], health insurance is nearly nonexistent in poor communities in rural India. One way of promoting the supply of health insurance for rural persons has been the Insurance Regulatory and Development Authority (IRDA) requirement that commercial insurers should satisfy rural and social quotas; another way to encourage the development of community-based micro health insurance units (MIUs) has been to include it under the government's national rural health mission [GoI 2005a], where the grassroot schemes are expected to offer essentially a complementary coverage additional to the existing government health services delivered free of charge. This would be possible, of course, only in such places where the public system is both present and trusted by the local population. In other places, the MIUs serve as substitutive schemes. Be the micro schemes complementary or substitutive, they are based on voluntary affiliation, and we assume that their main long-term source of financing is premium income. To make such programmes financially feasible, they must cover a finite benefit package that is affordable by the poor.

We evoke an underlying assumption that responsiveness of health insurance to prospective clients' perceived priorities would be positively associated with willingness to join such a system and pay for it [De Allegri et al 2006; Schone and Cooper 2001]. Responsiveness of the system refers, in this context, to the ability of clients to become involved in selecting the services that they will access [Murray and Frenk 2000]. Therefore, a method is needed to allow variably educated, poor populations who are inexperienced with health insurance, to ascertain their collective priorities for insured benefits.

While a variety of methods have been developed to engage the public in prioritising services [Mullen 2004; Ryan et al 2001; Mullen 1999] few are designed or applied to resource-poor populations; and never before has this been done in the context of health insurance in India. We developed a modified version of the Choosing Healthplans All Together (CHAT) exercise [Danis et al 2006; Goold et al 2005; Danis et al 2004; Danis et al 2002],

and tailored the underlying metrics to the reality of several rural and semi-urban (slum) locations in India. The purpose of this paper is to describe the major features of group process revealed in the simulation exercise conducted to test this tool, through which illiterate and innumerate persons in India were engaged in priority-setting regarding the composition of a health insurance benefit package.

Methods

Study Population

The experiment was conducted in 17 locations where community-based MIUs agreed to recruit both insured and uninsured participants for the exercise: (i) Karnataka: seven locations linked to the Karuna Trust, (ii) Maharashtra: four slum areas around Pune and six other locations in rural Maharashtra, linked to "Uplift Health".¹

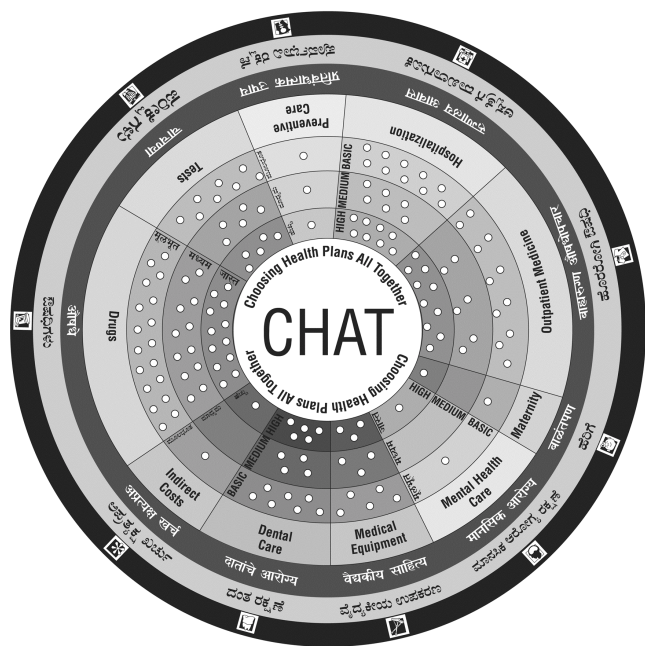
The MIUs that operate in locations where the experiment was conducted cover a partial benefit package and the premiums are partially subsidised [Devadasan et al 2005; Radermacher et al 2005a; Radermacher et al 2005b; Radwan 2005; Radermacher 2004; Ranson 2003].

To ensure optimal conditions for constructive group discussions during the sessions, groups were composed of 10 to 15 participants. We attempted to ensure gender parity, but in fact, more women than men participated.² We cannot exclude the possibility of some resulting bias on the choices recorded.

CHAT Decision Tool

The decision tool used in India was developed as part of the EU-India Economic Cross-Culture Programme (ECCP) project "Strengthening micro health insurance units for the poor in India" (www.microhealthinsurance-india.org). The tool is a game-like exercise facilitating group discussion of the decision-making process, involving many choice options and trade-offs within a limited budget. The exercise is built around a circular board which displays insurance benefit options as slices of a pie chart (see the figure). The CHAT board had 10 slices. The CHAT exercise is designed to make complex decisions more feasible by incorporating complicated data such as actuarial costs into a simply

Figure: CHAT Board for India



The game board is accompanied by a CHAT manual that provides simple descriptions of every benefit, including the difference between coverage levels of each benefit. The exercise is also accompanied by a facilitator’s guide that provides detailed instructions so that the exercise can be facilitated in a standardised approach by a group leader with minimal practice.

The decision-making process: The CHAT exercise involved two rounds of decision-making. In the first round, participants are instructed to choose benefit packages to meet their and their families’ needs; in the second round, the facilitator leads the whole groups in an exercise similar to focus group discussions (FGD) technique [Steward et al 2006; Morgan 1996] in choosing a benefit package for a larger unit such as their community. Such decisions were reached by consensus, reflecting the local cultural setting that unfolded during the field experiment.

To help participants appreciate the consequences of their choices and make them more prudent as they progress through the exercise, they are given, at the end of the first round, randomly assigned health event cards that contain stories of illness episodes and explain the consequences of the benefit choices in relation to these events.

Pre-exercise and post-exercise questionnaires are used to collect socio-demographic information and attitudinal information of the particular population being surveyed. Survey items used to measure participant assessment of the exercise have been tested previously [Goold et al 2005].

Determination of benefit options: The 10 benefit types that were included in the CHAT board reflect a synthesis of three sources of information: (i) published sources regarding health insurance in India [ILO 2005; Radwan 2005; Gumber 2002; Peters et al 2002; WHO 2001; Normand and Weber 1994], (ii) utilisation data from the household survey described below, and (iii) knowledge of the team regarding available health services in India.

To identify illness frequency in the absence of prior insurance utilisation, we used the results of a random household (HH) survey conducted in the initial phase of the ECCP project, in 243 villages in seven purposively selected locations in Maharashtra, Karnataka, Bihar and Tamil Nadu [Dror et al 2007b]. The survey included questions on care-seeking episodes in the last three months, hospitalisation episodes in the last two years, and maternity episodes in the last five years as well as information about OOP costs of these episodes.

presented exercise board. The decision process is also guided in that the options offered to participants are determined prior to their participation.

Participants are given stickers representing the monetary amount of their insurance premium, to place on the benefits they wish to include in their insurance package. The cost of these benefits was based on actuarial calculations.

Most benefit types are offered for selection at basic, medium or high coverage levels, some benefits are offered at basic and high levels only. The distinction between basic, medium and high coverage is the amount of co-payment payable by the participant. At the higher benefit level the out-of-pocket co-payment is lower. Participants have the option to forgo a benefit altogether. The sticker requirements are additive; stickers must be assigned to the basic level before they can be used to choose the medium level and so on.

Table 1: Description and Sticker Prices of Benefits Offered in the CHAT Exercise in India

Benefit Description	Level of Benefit Coverage		
	Basic	Medium	High
<i>Outpatient medicine</i> Insurance pays for treatment by a registered health worker (physicians, specialists, nurses) outside of the hospital.	11 Stickers Insurance pays for half the cost of services	11 + 6 Stickers Insurance pays for half the cost of inexpensive treatments (for example, when your bill is Rs 50, you pay Rs 25). When treatment costs are more than Rs 60 your insurance starts paying more than half (for example, when the bill is Rs 300 you pay only Rs 45.)	11 + 6 + 10 Stickers Insurance pays for all the cost of services
<i>Hospitalisation</i> Insurance pays for hospital bills except for mental illness and childbirth.	10 Stickers Insurance pays for half the cost of services	10 + 6 Stickers Insurance pays for half the cost of inexpensive stays in the hospital (for example, when your bill is Rs 1,000, you pay Rs 500). When treatment costs are more than Rs 1,500 your insurance starts paying more than half (for example, when the bill is Rs 10,000 you pay only Rs 1,275)	10 + 6 + 8 Stickers Insurance pays for all the cost of services

(Contd)

Table 1: Description and Sticker Prices of Benefits Offered in the CHAT Exercise in India (Contd)

Benefit Description	Level of Benefit Coverage		
	Basic	Medium	High
<p><i>Maternity</i> Insurance pays for the mother's care before, during and after delivery Insurance pays for delivery in the hospital Insurance pays for the child's care until 1 year Insurance pays for family planning.</p>	<p><i>1 Sticker</i> Insurance pays for half the cost of services</p>		<p><i>1 + 1 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Drugs</i> Insurance pays for medicines, bandages and other consumable medical supply prescribed by a registered healthcare worker in or out of the hospital but used in an outpatient setting.</p>	<p><i>18 Stickers</i> Insurance pays for half the cost of services</p>	<p><i>18 + 12 Stickers</i> Insurance pays for half the cost of inexpensive drugs (for example, when your bill is Rs 100, you pay Rs 50). When treatment costs more than Rs 175, your insurance starts paying more than half (for example, when the bill is Rs 1,000 you pay only Rs 140.)</p>	<p><i>18 + 12 + 12 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Tests</i> Insurance pays for lab tests and x-rays ordered by a registered healthcare worker and used in an outpatient setting.</p>	<p><i>8 Stickers</i> Insurance pays for half the cost of services</p>	<p><i>8 + 5 Stickers</i> Insurance pays for half the cost of inexpensive tests (for example, when your bill is Rs 80, you pay Rs 40). When treatment costs more than Rs 150, your insurance starts paying more than half (for example, when the bill is Rs 500 you pay only Rs 100.)</p>	<p><i>8 + 5 + 5 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Dental care</i> Insurance pays for the necessary care of your teeth.</p>	<p><i>7 Stickers</i> Insurance pays for half the cost of services</p>	<p><i>7 + 4 Stickers</i> Insurance pays for half the cost of inexpensive dental care (for example, when your bill is Rs 50, you pay Rs 25). When treatment costs are more than Rs 50, your insurance starts paying more than half (for example, when the bill is Rs 400 you pay only Rs 50.)</p>	<p><i>7 + 4 + 5 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Mental healthcare</i> Insurance pays for treatment of mental illness. Insurance pays for treatment of alcohol or drug abuse.</p>	<p><i>1 Sticker</i> Insurance pays for half the cost of services</p>		<p><i>1 + 1 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Preventive care</i> Insurance pays for preventive services, mainly annual health check-ups, for household members older than one year.</p>	<p><i>1 Sticker</i> Insurance pays for half the cost of services</p>	<p><i>1 + 1 Stickers</i> Insurance pays for half the cost of inexpensive treatments (for example, when your bill is Rs 30, you pay Rs 15). When treatment costs are more than Rs 60, your insurance starts paying more than half (for example, when the bill is Rs 150 you pay only Rs 35.)</p>	<p><i>1 + 1 + 1 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Medical equipment</i> Insurance pays for equipment such as eye glasses, hearing aids, wheel chairs, crutches. Insurance pays for an ambulance to take you to the hospital.</p>	<p><i>5 Stickers</i> Insurance pays for half the cost of services</p>	<p><i>5 + 3 Stickers</i> Insurance pays for half the cost of inexpensive treatments (for example, when your bill is Rs 40, you pay Rs 20). When treatment costs more than Rs 40, your insurance starts paying more than half (for example, when the bill is Rs 1,000 you pay only Rs 75.)</p>	<p><i>5 + 3 + 3 Stickers</i> Insurance pays for all the cost of services</p>
<p><i>Indirect costs</i> Insurance pays for wage loss and transportation costs due to hospitalisation. Insurance pays for continued health insurance coverage in case of death or permanent disability of the head of the household.</p>	<p><i>1 Sticker</i> 1 Members requiring inpatient treatment are paid Rs 50 per day to cover lost wages. 2 Health insurance coverage is continued for three months in case the head of the household dies or gets permanently disabled.</p>		<p><i>1 + 1 Stickers</i> 1 Members requiring inpatient treatment are paid Rs 100 per day to cover drugs not included in hospital costs as well as lost wages. 2 Health insurance coverage is continued for six months in case the head of the household dies or gets permanently disabled.</p>

Note: Each sticker has a value of Rs 10.

Actuarial estimates of costs: The incidence and unit costs of hospitalisations, consultations, diagnostic tests and prescribed drugs were estimated based on the reported incidence and costs in the HH survey, reflecting respondent's actual utilisation in the public and/or private sector. An actuary with field experience in India adjusted the data as necessary. The incidence and unit costs of preventive care, dental care, mental care, medical equipment, indirect costs and maternity was estimated by the actuary.³

The actuarial calculations that determine the cost of the benefits were expressed in monetary terms, which were converted into stickers. The number of stickers required for each benefit was proportional to its actuarial estimate; each sticker represents a value of Rs 10.

Algorithms for the Calculation of Coverage Levels

Basic level of coverage: covers 50 per cent of all costs; 50 per cent is paid out-of-pocket

High level of coverage: 100 per cent of all costs; zero out-of-pocket payment

Medium level of coverage: benefit increases as the bill increases, according to the following formula:

- Bill under median cost: insurance pays 50 per cent of bill
- Bill between median and 70th percentile: insurance pays $(\text{Median}/2) + (\text{bill}-\text{median} \times 0.9)$.
- Bill higher than 70th percentile: insurance pays: $(\text{Median}/2) + (\text{p70}-\text{median}) \times 0.9 + (\text{bill} - \text{p70}) \times 0.95$

In the CHAT manual these algorithms were described as illustrative examples, without formulas. The explanation of medium level of coverage given to respondents was as follows: "Insurance pays for half the cost of inexpensive cost in hospital (example: when your bill is Rs 1,000 you pay Rs 500); when treatment costs are more than Rs 1,500, your insurance pays more than half (for example, when your bill is Rs 10,000, you pay only Rs 1,275)". The list of benefit types and the sticker-value of each level of coverage are shown in Table 1.

Determination of the insurance premium: The insurance premium was determined based on the insights gained from the bidding game method used to elicit willingness to pay (WTP) for health insurance, conducted along with the HH survey referred to above [Dror et al 2007b; Dong et al 2003]. This WTP study suggested that median WTP was around 1.3 per cent of annual HH income. We checked the median HH income of the populations in the areas where the CHAT experiment unfolded; as found in the HH survey, in Maharashtra, median income from all sources for the comparable cohort was Rs 48,000 (1.3 per cent = Rs 624); and in Karnataka, median income from all sources was Rs 39,800 (1.3 per cent = Rs 517). These results are comparable to the data published in the 60th round of the National Sample Survey (NSS) regarding consumer expenditure.⁴

We retained a premium amount of Rs 500 per household per year as the benchmark for health insurance. Thus, the value of each sticker was set at Rs 10, and participants received 50 stickers as the budget with which they could prioritise benefits for health insurance. Incidentally, the premium amount could cover 34 per cent of the total cost of all options available on the CHAT board reflecting the severe rationing that was called for. Thus by giving stickers that could cover less than the total value of services offered, the process involved an exercise in priority setting.

It should be noted that in the testing of the tool prior to the field experiment we also tested a version in which participants were offered only 35 stickers (representing a premium level of Rs 350). This pre-test led to extreme frustration among the participants, who were unable to compose any benefit package acceptable to them within the cost limitations of the benefits as defined in the current version of the CHAT tool. This option was therefore abandoned.

Introducing the concept of insurance: Since health insurance is rare in India, but life insurance much more prevalent, many people associate the term insurance with life insurance [Mladovsky and Mossialos 2006; Presswala 2004]. We attempted to overcome this lack of familiarity with health insurance by adding a short explanation that conveyed the message that illness can cause financial losses due to costs of medical care and loss of ability to earn. The statement also conveyed that insurance allows a community to collectively pool funds to pay for those costs either by paying the provider or repaying out of pocket spending. The explanation was incorporated into the facilitator's guide to ensure that it is read aloud by the facilitator everywhere to assure the same basic understanding about health insurance among all participants.

Translation into local languages: All materials including the CHAT exercise board, the facilitator's text, user manual, health events, and questionnaires were translated into Kannada

Table 2: Characteristics of Study Participants (N=302)

Characteristic	n	Mean ± SD	Per Cent
Age (years)	-	32.7 ± 9	
Female	241		79.8
Rural	220		72.8
Insured	125		41.4
<i>Household size</i>	-	5.6 ± 2.27	
Between 1 and 2	5		1.7
Between 3 and 4	98		32.5
5 and above	199		65.9
<i>Religion</i>			
Hindu	286		94.7
Muslim	13		4.3
Christian	1		0.3
Other	2		0.7
<i>Marital status</i>			
Single	26		8.6
Married	260		86.1
Widowed	15		5.0
Separated	1		0.3
<i>Educational level</i>			
None	98		32.8
1st-4th grade	28		9.4
5th - 7th grade	49		16.4
8th - 10th grade	86		28.8
11th or 12th grade	31		10.4
12+ to graduate	7		2.3
<i>Source of household income</i>			
Own farm	85		28.4
Farm labourer/daily wages	65		21.7
Service holders	41		13.7
Wage earners	62		20.7
Trade/business	35		11.7
Others	11		3.7
<i>Recent morbidity</i>			
Member of household ill in the last three months	216		72.5
Member of household hospitalised in the last year	113		37.7
<i>Hospital service used</i>			
Public	107		35.5
Private	191		63.5
Charitable	3		1.0

and Marathi, with back translation into English for validation purposes.

Special facilities for non-readers: Anticipating that many participants would be challenged in reading, we printed icons on the CHAT board representing the benefit types, next to the alphabetic descriptors. In addition, we engaged an assistant-facilitator for every three participants, to help participants respond to questionnaires, read benefit descriptions if desired from the user's manual, and demonstrate how to make choices by placing stickers on the CHAT board. However, due attention was taken by the team members to ensure that the assistance rendered by the assistant facilitators did not sway the choices and decisions of the participants during the exercise.

Human Subjects Protection

This study was reviewed by the office of human subjects research at the clinical centre of the National Institutes of Health and was exempted from Institutional Review Boards' (IRB) review. Data were collected anonymously and participants were informed that their participation was voluntary and that they could leave the study at any time.

Data Analysis

Participant socio-demographic characteristics and the items assessing the exercise were analysed using descriptive statistics. Individual and group choices were compared using paired sample t-test and Wilcoxon Signed-ranks test. The effect of group process on choice of benefit types was analysed by the non-parametric sign test.

Results

Survey Population

Three hundred and two individuals in 24 groups participated in the exercise during November and December 2005 (Table 2). There was an average of 12.6 participants per session. The majority of participants were female, married and from rural areas. One-third of the participants were illiterate and those with schooling were at lower grades. Approximately, 40 per cent of the participants were insured members of MIUs. The majority of the participants reported that family members had illness

episodes in the prior three months and 37.7 per cent claimed at least one hospitalisation in their HH in the prior year.⁵ When seeking health care, 63.5 per cent of the participants reported normally going to private hospitals.⁶

Effect of Group Process on the Number of Benefit Types

The 302 participants, who formed 24 groups (with minimum 10 participants per group; maximum 17; median 12) were invited in the 1st round, to choose the benefits they would like to include for their family; and in the 2nd round, to reach consensus on a health insurance plan that would suit their whole community. The choices of rounds one and two are shown next to each other in Table 3.

We are interested in the impact of group process, manifested in the shift of the average choice in rounds one and two. This shift is described in Table 4. As can be seen there, in 17 out of the 24 cases (or 70 per cent), the number of benefit types included in the packages of groups was significantly higher than the average number of benefit types included in the packages chosen by the same individuals in round one (Wilcoxon Signed-ranks test; $-3.13 < Z < -2.12$; $p < .05$). Interestingly, there is not a single case in which a group chose significantly fewer benefit types than its members chose in round one. In the aggregated sample, groups included more benefits in their packages (mean = 7.26) than did individuals (mean: 6.23), (paired samples t-test, $p < .001$).

The Effect of Group Process on Coverage Levels

Recalling that CHAT is played with a fixed budget, there is a trade-off between the level of coverage and the number of benefits included. It has been shown above that most groups preferred a wider range of benefits. The two options open to respondents are either to downgrade coverage levels (from high or medium to basic level) while retaining benefit types or to retain the high coverage level, but replace expensive benefit types with cheaper ones. We checked the prevalence of the first option by examining the effect of group process on the ratio between choices of benefit types covered at basic level and the total number of benefit types included in the package. The aggregated results display a modest but significant increase in the ratio of benefit types chosen at basic level (from 0.68 to 0.75, paired

Table 3: Benefit Types Chosen by Respondents in Rounds One and Two

Type of Benefits	Nothing				Basic				Medium				High			
	r1		r2		r1		r2		r1		r2		r1		r2	
	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total	Replies	Per Cent of Total
Outpatient medicine	99	34.4	131	43.4	166	57.6	171	56.6	15	5.2	0	0.0	8	2.8	0	0.0
Hospitalisation	87	30.2	54	17.9	167	58.0	225	74.5	21	7.3	13	4.3	13	4.5	10	3.3
Preventive care	88	30.6	67	22.2	93	32.3	105	34.8	34	11.8	12	4.0	73	25.4	118	39.1
Tests	80	27.8	49	16.2	171	59.4	231	76.5	26	9.0	12	4.0	11	3.8	10	3.3
Drugs	36	12.5	22	7.3	222	77.1	280	92.7	23	8.0	0	0.0	7	2.4	0	0.0
Indirect costs	42	14.6	29	9.6	114	39.6	130	43.1					132	45.8	143	47.4
Dental care	151	52.4	175	58.0	113	39.2	115	38.1	12	4.2	12	4.0	12	4.2	0	0.0
Medical equipment	201	69.8	164	54.3	76	26.4	138	45.7	9	3.1	0	0.0	2	0.7	0	0.0
Mental health-care	153	53.1	133	44.0	67	23.3	87	28.8					68	23.6	82	27.2
Maternity	150	52.1	0	0.0	65	22.6	144	47.7					73	25.4	158	52.3

samples t-test, $p < 0.001$). This increase represents the trade-off between the larger number of benefits and the lower level of coverage.

The Effect of Group Process on Benefit Types Chosen

In the first round, the 302 participants tended to chose benefits in the following descending order of preference: drugs (87.5 per cent), indirect costs (85.4 per cent), tests (72.2 per cent), hospitalisation (69.8 per cent), preventive care (69.4 per cent), outpatient medicine (65.6 per cent), maternity (47.9 per cent), dental care (47.7 per cent), mental healthcare (46.9 per cent) and medical equipment (30.3 per cent) (Table 3). In the second round, when individual choices were replaced by group choices, two changes were possible: no-to-yes or yes-to-no. As can be seen in Table 5, in eight of the 10 benefit types, the number of no-to-yes changes exceeds the number of yes-to-no, and the difference is significant. This finding is consistent with the previous observation that the group process results in a more holistic benefit package. The only benefit type where the yes-to-no prevailed was outpatient care. And the change in dental care was not significant.

The benefit types that were chosen by fewer than half the respondents in round one (maternity, mental healthcare, dental care and medical equipment) are of special interest here: the group process was most influential in swaying no-to-yes votes in favour of these three benefit types. Considering that, with the exception, perhaps of dental care, these less-chosen benefits are relevant for weaker segments of the community: pregnant women, physically challenged and mentally ill persons. The groups seem willing to protect their weaker segments through this choice.

Respondents' Satisfaction with the CHAT Elicitation Method

At the end of the elicitation process, respondents were asked to complete an exit survey. In response to the question "would you recommend CHAT to others?" Ninety-eight per cent of the respondents answered affirmatively; and in response to the question "would you be willing to accept the group's choice of a plan?" Ninety-nine per cent said, yes. When asked "how much would you trust a group of consumers using CHAT to design a health insurance plan for you or your family", 67 per cent said "a great deal" and 28 per cent said "somewhat", while only 4 per cent said "very little" or "not at all". This is corroborated in 12 additional questions on different aspects of the elicitation process, mainly its fairness, clarity and relevance. The answers are overwhelmingly positive (Table 6).

Discussion

This study suggests that it is possible to create decision tools that allow rural and poor communities to participate in the design of insurance benefit packages. This experiment was conducted in the areas where health insurance is present, and it is likely that all participants, the uninsured included, had some knowledge about health insurance. However, the explanations given during the exercise on the concept of health insurance (founded on the better-known concept of life insurance), and the learning process which occurred with the aid of the health event cards, created

some familiarity with the decision process even among people who are unfamiliar with health insurance. Participants found the process easy to follow, informative and fair.

This study provides evidence that participants in the CHAT exercise were able to address the main problem of composing a health insurance package within a severe resource limitation. We found the method reasonably easy to administer and analyse.

The responses of participants in this field experiment suggest that when the problem of selecting healthcare benefits is presented in easily understandable terms, and the decision process is simple, communities show interest and capacity to make choices. This finding challenges the views of Lomas (1997).

Table 4: Comparison of Number of Benefits Chosen Per Package (at Rounds 1 and 2)

Group Number	Respondents	Round 1		Round 2	Z*	Sig (2-tailed)
		Mean No of Benefits	Standard Deviation	No of Benefits		
1	13	5.69	1.03	6	-1.100(a)	0.271
2	9	6.67	1.12	9	-2.751(a)	0.006
3	12	5.50	0.80	7	-2.994(a)	0.003
4	13	6.31	1.03	6	-1.100(b)	0.271
5	13	6.92	1.26	8	-2.449(a)	0.014
6	10	6.70	0.67	8	-2.739(a)	0.006
7	11	6.73	1.49	8	-2.263(a)	0.024
8	11	6.64	1.12	8	-2.549(a)	0.011
9	11	6.73	0.79	7	-1.134(a)	0.257
10	11	6.45	1.04	7	-1.613(a)	0.107
11	12	7.08	0.90	7	-.333(b)	0.739
12	12	5.17	1.27	7	-2.971(a)	0.003
13	10	5.70	1.49	6	-0.776(a)	0.438
14	12	5.33	1.61	8	-2.871(a)	0.004
15	12	5.42	0.79	8	-3.134(a)	0.002
16	13	6.08	1.55	8	-2.980(a)	0.003
17	12	5.75	1.29	7	-2.511(a)	0.012
18	11	6.55	1.04	8	-2.636(a)	0.008
19	17	6.00	0.94	7	-3.002(a)	0.003
20	12	6.25	0.87	7	-2.310(a)	0.021
21	13	6.38	0.77	7	-2.309(a)	0.021
22	13	6.31	1.03	7	-2.124(a)	0.034
23	12	6.83	0.83	7	-0.707(a)	0.480
24	13	6.54	0.66	7	-2.121(a)	0.034

Notes: * The significance of the difference in the number of benefits-per-package chosen in round 1 and round 2 was tested with Wilcoxon Signed-ranks test.

- (a) Based on negative ranks.
- (b) Based on positive ranks.

Table 5: The Effect of Group Process on the Choice of Benefit Types

Benefit Type	No Change (Per Cent)	Yes-to-No Change (Per Cent)	No-to-Yes Change (Per Cent)	Significance of the Difference between Yes-to-No and No-to-Yes*	Notes
	Outpatient medicine	62.2	24.0	13.9	
Inpatient	72.9	7.3	19.8	<0.0001	
Preventive care	59.7	16.0	24.3	0.03	
Tests	67.7	10.4	21.9	0.0008	
Drugs	83.7	5.2	11.1	0.02	
Indirect costs	82.6	5.9	11.5	0.03	
Dental care	56.1	25.4	18.5	0.11	NS
Medical equipment	53.3	16.0	30.7	0.0003	
Mental health	49.0	20.8	30.2	0.03	
Maternity	47.9		52.1	<0.0001	

* Tested with non-parametric sign test.

Some insights can be derived from the choices themselves. Participants frequently chose benefit types that represent better access to health services that are neither catastrophic nor rare, but can accumulate to prohibitive financial burden; these benefits include drugs, tests and preventive care. This challenges a commonly-held view that much of the health-related impoverishment is due to low-frequency and high unit-cost events, such as hospitalisations [World Bank 2001]. Another striking finding is the high frequency of choice of indirect costs; respondents are no doubt aware that indirect costs of illness can equal or surpass the cost of treatment. This is one of the defining characteristics of living and working in rural areas and in the informal sector, without any institutional protection against the loss of income or transactional costs due to illness. The frequent selection of the benefit “preventive care”, which was clearly defined narrowly within terms of the benefit that would be payable, suggests that their low educational level notwithstanding, participants are aware of the value of preventive medicine in improving protection against severe illness and its consequences. The judiciousness of choices, when juxtaposed with actual health expenditures, has been confirmed through analysis published in detail elsewhere [Dror et al 2007a].

The CHAT experience included both individual and group choices. Whereas the individual (“I”) choice focuses on the priorities of one respondent and his/her family, the group (“we”) choice focuses on the needs of an entire community, determined by consensus. The clearest insight on the transition of choices is that group consensus-building leads to a wider and more holistic benefit package, at the expense of depth of coverage. The same persons who excluded maternity, medical equipment and mental care when acting on their “I” choice included these benefits when called upon to act on the “we” choice. Thus, one can observe a willingness to choose services that are most beneficial to the weaker segments of the community, as the “we” benefits are traded-off against a reduction in the frequency of choice of a typical “I” benefit, namely, outpatient care. This change in perceived priorities suggests that the group dynamics

bring to the fore the declared values and goals of the community, thus enhancing social capital [Mladovsky and Mossialos 2006].

Participation in the CHAT simulation exercise offers an additional value of enhancing the understanding among participants of how health insurance works, and the link between what people pay and the benefits they can realistically expect in return. This awareness can enhance both willingness to join health insurance and willingness to pay for it among communities in rural India.

Limitations of the Model

A model that uses a method akin to FGDs obtains its data from small groups, and therefore, the statistical results could lack robustness. Nor would one be able to generalise the relevance of findings in specific locations to apply for as large and heterogeneous a country as India.

Another limitation is inherent to the tool itself. While participants have the opportunity to prioritise the benefits that they wish to retain in their benefit package, they cannot add other benefits that were not included. Nor can participants select to pay a higher price for more choice (e.g., for the right to select the specific surgeon that would operate them in a hospital). This more elaborate choice could not be translated into monetary terms in the context of rural India, even though such choices are commonplace in health insurance plans in rich countries. On the other hand, benefits were not limited to public or private provision, as the actuarial calculations were based on actual reported utilisation and out-of-pocket cost data, which aggregated both public and private facilities available locally. We should also note that the concept of preventive care that we used in the exercise was narrowly defined to include those services commonly offered in the medical setting although we recognise that prevention generally involves a broad array of public health measures. We expect that many of such interventions would be offered through public authorities who are responsible for such things as clean potable water, sewage management and other measures to prevent communicable diseases.

Conclusion

This experiment with the CHAT tool reveals the important influence of group dynamics on resource allocation decisions of clients in selecting a health insurance benefit package. Challenges such as limited literacy or numeracy of group members, or lack of prior experience with health insurance were not detrimental to a successful deliberation. The cultural setting brought to light prior experience of the groups in negotiating consensus. This skill was instrumental in simplifying the groups’ ability to deal with a new topic – health insurance – while retaining a balance between individual priorities and collective responsibility. [\[47\]](#)

Email: mdanis@nih.gov; erikabinnendijk@gmail.com; vellakkal@gmail.com; daviddror@socialre.org; Alexander.ost@gmx.de; rkoren@post.tau.ac.il

Notes

[This CHAT experiment was organised as part of the project ‘Strengthening Micro Health Insurance Units for the Poor in India’. This project was jointly implemented by the Institute for Health Policy and Management at the Erasmus University, Rotterdam (Netherlands), the Federation of Indian Chambers of Commerce and Industry-FICCI (India) and the University of

Table 6: Respondents’ Satisfaction with the CHAT Elicitation Method

Survey Item	Strongly Disagree (Per Cent)	Disagree (Per Cent)	Agree (Per Cent)	Strongly Agree (Per Cent)
1 I learned a lot playing the CHAT game	2	6	35	56
2 The information presented in CHAT was clear	6	2	29	63
3 The way the group reached its decision was fair	2	2	31	65
4 I was satisfied with the group’s decision	1	2	29	68
5 We had enough information to make good decisions	1	3	26	70
6 The way the group reached its decision was equally fair to each member of the group	0	1	27	72
7 Healthcare choices offered in the game were realistic	0	1	22	77
8 During the game, I was treated with respect	0	0	17	82
9 We had enough time to make good decisions	0	0	24	76
10 The group tried to be fair	0	0	27	73
11 Discussion during the game was open and honest	1	1	16	83

Cologne (Germany). Funding was provided by a grant from the European Commission through the EU-India Economic Cross Cultural Programme (ECCP). Additional financial support was secured from the Department of Clinical Bioethics at the National Institutes of Health in the US. Logistical support was provided by the Birla Institute for Management Technology, Greater Noida (India).

Persons who contributed to the experiment include: Denis Garand (actuary), Sheela Khare and Anagha Joshi (facilitators), Achuta Rao (Karuna Trust), F X Hay and Kumar Shailabh (Uplift Health, Pune), Sudarshan (Karuna Trust, Bangalore), and the leaders and residents of the villages that participated in this study. Ralf Radermacher, the ECCP project coordinator and Olga van Putten-Rademacher provided essential and helpful support all along the process. An anonymous referee offered useful comments and suggestions. Thanks to all. The opinions expressed here are those of the authors and do not necessarily reflect official policies of the National Institutes of Health and other institutions they are employed by or associated with.]

- 1 Villages that participated in Karnataka (total 11 sessions): V P Hundi (1 session), Madavadi (2 sessions), Kiragasur (2 sessions), Banave (1 session), Hiriuru (1 session), Beedanahalli (2 sessions), Kempaiahnundi (2 sessions). Villages in Maharashtra (total 13 sessions): Slum areas Pune: Gokhale Nagar (1 session), Karve Nagar (2 sessions), Janata Vasahat (2 sessions), Kashewadi (2 sessions), district Osmanabad: Ter (1 session), Wakerwadi (1 session), district Latur: Dhanegaon (1 session), Chata (1 session), district Solapur: Boramani (1 session), Musti (1 session).
- 2 One reason for this uneven number could be that the exercises, at least in some places, took place during the day.
- 3 The exact definitions of what is included in each benefit type are provided in Table 1.
- 4 In this sample, Rs 48,000 per household per year equals Rs 833 per person per month; and Rs 39,800 per household per year equals Rs 800 per persons per month. The corresponding average monthly per person consumer expenditure figures (MPCE) published in the 60th round of NSS (Table P3-2) are comparable: for Karnataka the rural amount was Rs 587 and the urban was Rs 1,066; and for Maharashtra the rural figure was Rs 672 and the urban was Rs 1,369 [GoI 2005b].
- 5 When normalised for the number of persons in the household (average of 5.6 in this group), the rate of hospitalisations is around 67/1000, which is much higher than the figures reported in the 60th round of NSS (20/1000 for Karnataka and 30/1000 for Maharashtra [GoI 2005c]) and those we obtained from our household survey in locations with micro health insurance schemes (about 30/1000 in Maharashtra and in Karnataka). We cannot say whether this large difference is explained by recall bias or by another reason.
- 6 According to 60th round of NSS, around 30 per cent of hospitalisations in Karnataka and Maharashtra (both rural and urban) occur in public hospitals; and in rural Karnataka, about 35 per cent use public facilities for non-institutionalised ailments (in urban Karnataka and Maharashtra this rate is around 15 per cent) [GoI 2005c]. So, the reported rate of 35.5 per cent that we recorded seems comparable, all the more so as the CHAT exercise was conducted mostly in rural areas.

References

- Banerji, D (2005): 'Politics of Rural Health in India', *Indian Journal of Public Health*, 49(3), pp 113-22.
- Churchill, C (2006): *Protecting the Poor: A Microinsurance Compendium*, ILO, Geneva.
- Danis, M, A K Biddle and S D Goold (2002): 'Insurance Benefit Preferences of the Low-Income Uninsured', *Journal of General Internal Medicine*, 17(2), pp 125-33.
- (2004): 'Enrollees Choose Priorities for Medicare', *Gerontologist*, 44(1), pp 58-67.
- Danis, M, M Ginsburg and S D Goold (2006): 'The Coverage Priorities of Disabled Adult Medical Beneficiaries', *Journal of Health Care Poor Underserved*, 17(3), pp 592-609.
- De Allegri, M, M Sanon, J Bridges et al (2006): 'Understanding Consumers' Preferences and Decision to Enrol in Community-based Health Insurance in Rural West Africa', *Health Policy*, 76(1), pp 58-71.
- Devadasan, N, W Van Damme, P van der Stuyft et al (2005): 'Protecting against Catastrophic Health Expenditure – The Role of Community Health Insurance in India', Global Forum for Health Research.
- Dong, H, B Kouyate, J Cairns et al (2003): 'A Comparison of the Reliability of the Take-It-or-Leave-It and the Bidding Game Approaches to Estimating Willingness-to-Pay in a Rural Population in West Africa', *Social Science and Medicines*, 56(10), pp 2181-89.
- Dror, D M, R Koren, A Ost et al (2007a): 'Health Insurance Benefit Packages Prioritised by Low-Income Clients in India: Three Criteria to Estimate Effectiveness of Choice', *Social Science and Medicines*, 64(4), pp 884-96.
- Dror, D M, R Radermacher and R Koren (2007b): 'Willingness to Pay for Health Insurance among Rural and Poor Persons: Field Evidence from Seven Micro Health Insurance Units in India', *Health Policy*, 82(1), pp 12-27.
- GoI (2005a): *National Rural Health Mission: Mission Document*, Ministry of Health and Family Welfare, New Delhi.
- (2005b): *Household Consumer Expenditure in India*, NSS 60th round, report No 505, National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, New Delhi.
- (2005c): *Morbidity, Healthcare and the Condition of the Aged*, NSS 60th round, report No 507, National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, New Delhi.
- Goold, S D, A K Biddle, G Klipp et al (2005): 'Choosing Healthplans All Together: A Deliberative Exercise for Allocating Limited Healthcare Resources', *Journal of Health Policy and Law*, 30(4), pp 563-601.
- Gumber, A (2002): *Health Insurance for the Informal Sector: Problems and Prospects*, Indian Council for Research on International Economic Relations, New Delhi.
- ILO (2005): 'Insurance Products Provided by Insurance Companies to the Disadvantaged Groups in India', Working Paper, International Labour Office, Geneva.
- James, C D, K Hanson, B McPake et al (2006): 'To Retain or Remove User Fees? Reflections on the Current Debate in Low- and Middle-Income Countries', *Applied Health Economics and Health Policy*, 5(3), pp 137-53.
- Lomas, J (1997): 'Reluctant Rationers: Public Input to Health Care Priorities', *Journal of Health Services and Research Policy*, 2(2), pp 103-111.
- Mladovsky, P and E Mossialos (2006): 'A Conceptual Framework for Community-Based Health Insurance in Low-Income Countries: Social Capital and Economic Development', LSE Health Working Paper, the London School of Economics and Political Science, London.
- Morgan, D L (1996): 'Focus Groups', *Annual Review of Sociology*, 22, pp 129-52.
- Mullen, P M (1999): 'Public Involvement in Healthcare Priority Setting: An Overview of Methods for Eliciting Values', *Health Expect*, 2(4), pp 222-34.
- (2004): 'Quantifying Priorities in Healthcare: Transparency or Illusion?' *Health Service Management Research*, 17(1), pp 47-58.
- Murray, C J and J Frenk (2000): 'A Framework for Assessing the Performance of Health Systems', *Bull World Health Organ*, 78(6), pp 717-31.
- Normand, C and A Weber (1994): *Social Health Insurance – A Guidebook for Planning*, World Health Organisation, Geneva.
- O'Donnell, O, E van Doorslaer, R P Rannan-Eliya et al (2005): 'Explaining the Incidence of Catastrophic Expenditures on Healthcare: Comparative Evidence from Asia', Working Paper No 5, EQUITAP Project, Erasmus University, Rotterdam and IPS, Colombo.
- Peters, D H, A S Yazbeck, R P Sharma et al (2002): *Better Health Systems for India's Poor: Findings, Analysis and Options*, World Bank, Washington DC.
- Presswala, R G (2004): 'Health Insurance – A Challenge in India', *Journal of Insurance Medicine*, 36(1), pp 60-73.
- Radermacher, R (2004): 'Health Insurance for the Poor – Examples from India', Weiden/Regensburg: Eurotrans-Verlag (unpublished monograph).
- Radermacher, R, O van Putten-Rademacher, V Müller et al (2005a): 'Karuna Trust, Karnataka India', CGAP Working Group on Microinsurance Good and Bad Practices, International Labour Organisation, Geneva.
- Radermacher, R, N Wig, O van Putten-Rademacher et al (2005b): 'Yeshasvini Trust, Karnataka India', CGAP Working Group on Microinsurance Good and Bad Practices, International Labour Organisation, Geneva.
- Radwan, I (2005): *India: Private Health Services for the Poor: A Policy Note*, World Bank, Washington DC.
- Ranson, M K (2003): 'Community-based Health Insurance Schemes in India: A Review', *National Medical Journal of India*, 16(2), pp 79-89.
- Ryan, M, D A Scott, C Reeves et al (2001): 'Eliciting Public Preferences for Healthcare: A Systematic Review of Techniques', *Health Technology Assessment*, 5(5), pp 1-186.
- Schone, B S and P F Cooper (2001): 'Assessing the Impact of Health Plan Choice', *Health Affairs (Millwood)*, 20(1), pp 267-75.
- Sodani, P R (2001): 'Potential of the Health Insurance Market for the Informal Sector: A Pilot Study', *Journal of Health Management*, 3(2), pp 283-308.
- Steward, D D W, P N Shamdasani and D W Rook (2006): *Focus Groups: Theory and Practice*, Sage Publications, Thousand Oaks.
- WHO (2001): *Country Health Profile: India*, World Health Organisation, Geneva.
- World Bank (2001): *Raising the Sights: Better Health Systems for India's Poor*, Washington DC.