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## **Quality Healthcare and Health Insurance Retention**

Evidence from a Randomized Experiment in the Kolkata Slums

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## ABSTRACT

Healthcare in developing countries is often unreliable and of poor quality, thus reducing individuals' incentives to use quality health services. This paper examines an innovative approach to access to and demand for quality health care from the poor. Using data from a field experiment in India, I examine the impact of high-quality care experiences in the form of a free medical consultation with a qualified nongovernmental organization doctor, randomly offered by a health insurance provider to a subset of its enrollees. The effects are twofold. First, receiving this additional benefit raises enrollees' willingness to pay to renew health insurance by 51 percent. This impact appears mostly at the extensive margin and is driven by a *perceived* income shock, as well as increased satisfaction with the scheme and trust in the insurance provider. In addition, exposed individuals are 12 percentage points more likely to consult a qualified practitioner when ill two months after the free consultation. Providing some initial quality care thus improves the demand for quality healthcare through two different pathways—first by improving health insurance retention and second by raising the subsequent use of quality health services.

**Keywords:** access to and demand for quality healthcare, micro health insurance retention, willingness to pay, trust, poverty, India

*JEL Classification:* I13, I15, O15

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# 1. INTRODUCTION

Improving its poor populations' access to quality healthcare is one of the major policy challenges facing India. Although poor households do care for their health and spend a significant fraction of their budget on health expenditures, they often use poor-quality health services (Banerjee, Deaton, and Duflo 2004; Jutting 2003; Peters and Muraleedharan 2008; Michielsen et al. 2011; Das and Hammer 2007). Various factors may account for this, including low exposure to higher-quality services (both public and private) and financial constraints.

The poor typically only have access to low-quality healthcare services, reflecting large inequalities in healthcare provision in India. Public-sector provision is plagued with high absenteeism rates among health professionals and a lack of competence and attention (Das and Hammer 2005; Chaudhury and Hammer 2004; Chaudhury et al. 2006). Private-sector providers in rural and poor urban areas are mostly unqualified and are also costly. Poor households therefore tend to either not consult with healthcare providers when they are ill or consult with unqualified practitioners, thus receiving inadequate treatment. Low access to quality healthcare not only has a detrimental direct effect on the health of poor populations; it also affects their perception of the quality of care (Das and Hammer 2005), leads them to underestimate the benefits of getting quality healthcare, and limits their demand for it.

The idea that exposure changes beliefs is not new and has been experimented with in other settings in the field (Beaman et al. 2009). There is also a growing literature on the salience of trust in the relationships between patients, providers, and insurers, which are characterized by a delegation of responsibilities and, therefore, uncertainty (Schneider 2005; Gilson 2003). Trust appears as a means for mitigating these uncertainties (Arrow 1963), and a good provider-patient relationship appears as an essential part of interventions for health-quality improvement (Michielsen et al. 2011). The literature also suggests that exposure to high-quality health services may raise trust in, value of, and thus demand for quality healthcare.

The cost of inpatient care in urban areas has increased dramatically in India over the past ten years, especially for the poorest households (Balarajan, Selvaraj, and Subramanian 2011). Micro health insurance (MHI) has recently attracted increasing interest as a means of offering financial protection to poor households (Chankova, Sulzbach, and Diop 2008; Preker et al. 2002; Jutting 2004) and better access to quality health services (Zheng and Zimmer 2008; Dror et al. 2009).<sup>1</sup> However, MHI faces challenges in both expansion and sustainability.

In India, only 11 percent of the population is covered by any form of health insurance (Cohen 2006). Low demand for health insurance translates into low take-up (Chankova, Sulzbach, and Diop 2008; Giné, Townsend, and Vickery 2008; Jowett 2003; Morduch 1999) and low retention (Dror et al. 2009; Thornton et al. 2010). Research suggests that the persistence of low renewal rates is attributable to the low perceived value of the product (Jehu-Appiah et al. 2011), especially among nonclaimants (McCord 2001). Low demand for health insurance might also result from credit constraints (Ahuja and Jutting 2009), incentives to free ride in the presence of informal risk-sharing groups<sup>2</sup> (Janssens and Kramer 2013), the commonly low quality of healthcare (Dror 2007), low access to care, and a lack of trust in the health insurance provider (Schneider 2005; Dror and Jacquier 1999).

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<sup>1</sup> Recent evidence casts doubt upon the capacity of health insurance programs to increase the use of healthcare services among the poor. See Michielsen et al. (2011) and Thornton et al. (2010).

<sup>2</sup> In a framed field experiment conducted in Tanzania, Janssens and Kramer (2013) found evidence of a social dilemma in the presence of jointly liable groups. Individual insurance is then a public good, and less risk-averse individuals have a private incentive to free ride and forgo individual insurance, explaining low take-up rates.

However, nonexperimental studies on the determinants of low retention in MHI and low demand for quality healthcare are prone to reverse causality and omitted variable bias. For instance, if households covered by health insurance have greater access to health services (Yip and Berman 2001; Jutting 2003), then cross-section analyses would have limited scope in yielding reliable estimates of the impact of healthcare access on health insurance retention. Similarly, if wealthier or better-informed households were both more likely to remain insured and to have access to preventive health services, then unobservable differences between households with high and low access to health services would confound estimates of the impact of healthcare access on health insurance retention.

To address these issues, as well as the dearth of evidence on effective ways to foster access to quality healthcare (Ensor and Cooper 2004), I evaluate a randomized field experiment in an Indian slum that is designed to explore two pathways for improving quality healthcare for the poor through a single intervention. More specifically, the experiment allows us to explore whether the free provision of a quality preventive health service may (1) increase the subsequent use of quality healthcare services and (2) add value to an MHI scheme. It also allows us to examine the extent to which this access may increase policyholders' willingness to remain in the health insurance scheme.

Half of the policyholders of an MHI scheme, randomly chosen, were offered free wellness clinic checkups as an additional benefit. Through this service, insurance policyholders in a slum in Howrah (West Bengal, India) were invited, during the remaining two months of their insurance coverage, to free wellness clinic checkups with a certified doctor for all interested members of their families. The service was designed to add value to the insurance product for both claimants and nonclaimants, to improve the perception that policyholders have of the quality of healthcare, and to motivate them to renew their policy for the next insurance period. I measure participants' reported willingness to pay for health insurance renewal through a unidirectional bidding game (see Dror, Radermacher, and Koren [2007] for more details) that was conducted among 169 households in the slum.

I find that offering health insurance policyholders a free medical consultation is a simple and efficient way to improve their demand for quality healthcare through two different pathways. First, exposing individuals to higher-quality healthcare changes their perceptions, raises the anticipated benefit of using quality healthcare, and leads them to use higher-quality services. Beneficiaries are 12 percent more likely to consult a qualified practitioner when ill two months after the free consultation. Second, by offering this additional benefit, the insurance provider is able to retain policyholders in the scheme, thus loosening the financial burden of quality healthcare. Participants are also willing to pay an additional 38 percent of the premium to renew their insurance. The rise in demand for renewed insurance is not driven by an objective improvement in participants' financial situation (through a real income shock) or in their health knowledge or health status; rather it is driven by changes in perceptions and trust. There is no significant difference in the impact of the health checkup among claiming and nonclaiming policyholders; however, the free checkup offer does improve households' perceptions of their financial situation (a perceived income shock), their trust in the healthcare and insurance providers, and their satisfaction with the insurance scheme. These mechanisms may be driving the positive impact on the willingness to pay to renew the health insurance scheme. I also provide evidence of cash constraints in poor households' access to good-quality healthcare and find that there is no significant impact on the share of health expenses, indicating no substitution of the free checkup for a payable consultation.

In addition to contributing to the MHI literature and to the lively policy debate on free service distribution, this paper contributes to the literature on quality healthcare for the poor and on the salience of trust for addressing this issue. Furthermore, this paper draws on a growing literature on the role of learning-by-doing in technology adoption (Oster and Thornton 2012; Dupas 2013; Foster and Rosenzweig 2010). Although not directly dealing with technology, *per se*, I empirically show how increasing poor households' exposure to a free quality service for which they initially have a relatively low demand (here, quality healthcare) can improve these households' perception of the benefits they anticipate from the service and can subsequently increase their demand for the service, as well as for products mitigating the risk of not accessing this service (here, health insurance). Again, the idea that exposure changes beliefs and perceptions, and therefore behaviors, has been widely discussed in social psychology. (See the seminal work of Simon [1984] and Kahneman and Tversky [1979] on heuristics in human decisionmaking and, more recently, Epstein's [2003] work on



cognitive-experiential self-theory, showing that people's perceptions are based on a dual-process model in which they process information through two separate systems: an analytical-rational one and an intuitive-experiential one [Epstein 2003; Pacini and Epstein 1999].) The impact of experience on perceptions and decisionmaking has also been investigated in other settings in development economics (Beaman et al. 2009; Benhassine et al. 2013). However, this paper is the first study providing rigorous evidence of the changes that exposure to high-quality healthcare may trigger in health behaviors.

The remainder of the paper is laid out as follows. In Sections 2 and 3, I describe the setting of the field experiment and the data. Section 4 presents and discusses the take-up results. Section 5 presents the results on the impact of the free checkup offer. Chapter 6 concludes.

## 2. BACKGROUND ON THE FIELD EXPERIMENT

### Healthcare in India

Healthcare provision is diverse and unequal in India, and the dismal state of India's public health services has indeed been widely discussed (Banerjee, Deaton, and Duflo 2004; Jutting 2003; Peters and Muraleedharan 2008; Michielsen et al. 2011). Das and Hammer (2007) showed that inequalities in the quality of care are a result of the incentives that doctors face—"high power" in the form of private fee for service versus "low power" in the form of public salaries—rather than a reflection of competence or knowledge gaps. The public sector suffers from low incentives for health professionals to perform well; doctors in public facilities are typically well below their knowledge frontier. Staffing and supply shortages are common, and the public health system is widely perceived to be of poor quality (Dreze and Sen 1995; Berman 1998). On the contrary, private doctors, though less qualified on average, provide better care (Das and Hammer 2005). However, this picture conceals many disparities. Whereas the rich have access to the highest-quality private care, private services are scarce in rural areas and urban slums, and most private practitioners, especially those consulted by the poor, are ill-qualified (Michielsen et al. 2011). Overall, inefficient administration, ill-qualified private health providers, and the absence of adequate regulation of the quality of services all act to deprive the poor of access to quality healthcare (Jutting 2003; Peters and Muraleedharan 2008). A study conducted in Madhya Pradesh by Das, Pande, and Zajonc (2012) reported that 67 percent of interviewed healthcare providers had no medical qualifications at all. Even when the interviewed providers were trained, the report found very low adherence to clinical checklists; 41.7 percent of the time, the clinics provided unnecessary or harmful treatments.

For the urban poor, services are not only of low quality but are also costly. A survey conducted in the Fakir Bagan slum prior to the experiment shows that more than half of the sampled population (53.9 percent) had borrowed money in the *preceding year* to cover medical expenses (almost 10,000 rupees [Rs.], or US\$160 on average, which is up to three times the average monthly income of Rs. 3273, or US\$53). Informal risk-sharing networks are insufficient to cover medical risk, and most people have to borrow from moneylenders at a high interest rate (Levinson 2007). The high financial costs linked with consulting high-quality private practitioners and the low perceived quality of public practitioners lead the poor to turn to unqualified practitioners (*quacks*), with dramatic health consequences.

### Experimental Setting

The experiment I evaluate was designed to assess whether increasing the perceived value of health insurance and people's trust in the healthcare system might retain MHI policyholders and increase demand for quality healthcare.

The experiment offered randomly chosen MHI policyholders a preventive medical checkup as an additional benefit to their insurance product. Companies usually try to increase the *perceived* value of their insurance product by developing marketing campaigns that highlight the benefits that claimants may get. The campaign evaluated here is different in that (1) it proposes to increase the *real* value of the product directly by providing an additional service to policyholders and indirectly by building trust in the services covered by the product—namely, the healthcare system; and (2) it adds value for both claimants and nonclaimants.

The program was run between December 2010 and March 2012 by the nongovernmental organization (NGO) Calcutta Kids in Fakir Bagan, an urban slum in Howrah (West Bengal, India). Calcutta Kids has been operating a voluntary MHI scheme in Fakir Bagan since March 2009. The scheme covers expenses associated with inpatient care for all members of a given household between 3 months and 70 years old, for up to Rs. 15,000 (US\$240). It works in partnership with the United India Insurance Company.<sup>3</sup> Calcutta Kids serves as an intermediary between the insurance company and the population. The NGO's involvement in the insurance process aims at improving enrollment

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<sup>3</sup> Coverage, benefits, exclusions, and premia are presented in more detail in the Appendix.

and renewal in the scheme through three different channels: (1) facilitating less-educated people's access to the scheme by simplifying the paperwork and procedures (Meng et al. 2011), (2) easing credit constraints by making the timing of payments more flexible (Jutting 2004), and (3) building trust in the institution that provides the insurance product (Jehu-Appiah et al. 2011).

Between March and May 2010, 189 households either enrolled themselves and their family members in the one-year insurance scheme or renewed their enrollment. The initial sample comprises 169 of these households for which complete baseline data were collected.

## **Project Design**

In December 2010, an expansion of the scheme was introduced in the form of a free medical checkup with a registered physician in the Calcutta Kids wellness clinic. Health insurance policyholders were randomly split into two equally sized groups. The 82 households in the treatment group received access and were encouraged to use the wellness clinic for a free checkup for any or all members of the insured family under the policy; the 87 households in the control group were not offered the free checkup.

The checkup was offered during the last two months of the household's policy. Calcutta Kids community health workers offered door-to-door invitations to households in the treatment group. A coupon indicating the details of the offer was given to the household; this coupon stated that the family had been selected by lottery to benefit from a free health checkup worth approximately Rs. 400 (US\$6.40) for the entire family as part of the expanded insurance scheme. The coupon also mentioned the clinic's operating hours (9:30 a.m. to 5:30 p.m.). Visits were allowed for about two months after the coupon was handed out.

In most cases, all members of a policyholder's household took advantage of the checkup. On a typical visit, Calcutta Kids health workers welcomed the patients; recorded their name; checked their height, weight, and blood pressure; and directed them to the doctor's waiting lounge. The doctor did a thorough checkup of each patient (ear, throat, chest, and so on) and inquired about allergies, potential symptoms of common types of contamination, medical history, and diet. When medical problems were identified, diet, medicine, or follow-up investigations were prescribed, and the information was registered in the client's medical record. The consultation with the doctor usually lasted around 20 minutes.

The experiment evaluates the various impacts that providing free medical checkups to MHI policyholders has on participants' willingness to pay for policy renewal, perceptions of the quality of the healthcare system, satisfaction with the policy, trust in the provider, and objective and subjective measures of health condition and financial situation. The randomized selection of beneficiaries and nonbeneficiaries of the free medical checkup allows us to isolate the program's causal effect from confounding factors.

### 3. DATA AND EXPERIMENT INTEGRITY

#### Sampling and Origin of the Data

The original sample comprises 169 households that subscribed to the health insurance scheme managed through Calcutta Kids between March and May 2010 and for which I have complete baseline data. The composition of the treatment and control groups is randomized, with stratification based on whether policyholders had a preexisting relationship with Calcutta Kids through one of their other programs (Maternal and Young Child Health Initiative, outpatient counseling service (OPCS) program, or MHI).

The empirical analysis derives from two original surveys: a baseline and a follow-up survey. Calcutta Kids' project manager conducted the baseline survey between March and May 2010 when households enrolled in the insurance scheme, which was approximately nine to ten months before the invitation to the medical checkup was given. A survey company collected follow-up data about 15 months after enrollment. The follow-up survey collects information about healthcare behavior, health status and knowledge, willingness to pay, and attitude toward risk and insurance. Willingness to pay is measured through a unidirectional (descending) bidding game, following Dror, Radermacher, and Koren (2007). I also used compliance data collected by Calcutta Kids' community workers at the time of the checkup.

#### Descriptive Sample Characteristics and Randomization Check

The baseline survey was administered at participants' homes at the time of MHI purchase, between March and May 2010.

The baseline survey assessed socioeconomic status, demographics, and insurance coverage. Table 3.1 presents summary statistics of observable household and individual characteristics at baseline for all households in the sample, as well as the *p*-value of a test of the null hypothesis that the means in the treatment and control groups cannot be distinguished from each other. Some of the sociodemographic characteristics are shown for the primary holder of the health insurance policy, who is usually the household head.

Of the primary policyholders, 86 percent are male, and 64 percent have not attained secondary education. More than one-third is in a precarious working situation—either daily wage workers (25 percent) or unemployed (12 percent). A majority of the households are Hindu (92 percent). In addition, 27 percent of the households benefited from the Maternal and Young Child Health Initiative (MYCHI) program previously offered by Calcutta Kids, 37 percent subscribed to the same MHI scheme the previous year, and only 5 percent had benefited from the outpatient counseling service (OPCS) program.

Overall, the treatment and control groups displayed similar characteristics. Out of the 18 characteristics shown in Table 3.1, only one—exposure to OPCS provided by Calcutta Kids within the previous nine months—shows significantly different means in the treatment and control groups, as one would expect.

**Table 3.1 Summary statistics**

Variable	Full sample		Treatment		Control		$\rho$ -value
	Mean	SD	Mean	SD	Mean	SD	T test
<i>Primary holder characteristics</i>							
Male	0.864	(0.344)	0.902	(0.299)	0.828	(0.38)	0.158
No education	0.249	(0.433)	0.195	(0.399)	0.299	(0.46)	0.120
Some primary education	0.391	(0.489)	0.427	(0.498)	0.356	(0.482)	0.351
Some secondary education	0.231	(0.423)	0.220	(0.416)	0.241	(0.43)	0.738
Secondary completed	0.130	(0.337)	0.159	(0.367)	0.103	(0.306)	0.290
Self-employed	0.278	(0.449)	0.280	(0.452)	0.276	(0.45)	0.947
Regular salaried employee	0.231	(0.423)	0.256	(0.439)	0.207	(0.407)	0.451
Daily wage worker	0.249	(0.433)	0.220	(0.416)	0.276	(0.45)	0.400
Trade worker	0.118	(0.324)	0.085	(0.281)	0.149	(0.359)	0.200
Unemployed	0.124	(0.331)	0.159	(0.367)	0.092	(0.291)	0.192
Hindu	0.923	(0.267)	0.939	(0.241)	0.908	(0.291)	0.453
Muslim	0.059	(0.237)	0.049	(0.217)	0.069	(0.255)	0.581
Christian	0.018	(0.132)	0.012	(0.11)	0.023	(0.151)	0.598
<i>Household characteristics</i>							
Household size	3.592	(1.449)	3.720	(1.468)	3.471	(1.429)	0.267
Income	4,964.50	(4,175.73)	5,398.78	(4,923.1)	4,555.17	(3,299.29)	0.190
MYCHI	0.272	(0.446)	0.317	(0.468)	0.230	(0.423)	0.205
Renewal	0.373	(0.485)	0.354	(0.481)	0.391	(0.491)	0.620
OPCS	0.053	(0.225)	0.110	(0.315)	0.000	(0)	0.001
Observations	169		82		87		

Source: Author's data.

Note: SD = standard deviation; MYCHI = Maternal and Young Child Health Initiative; OPCS = outpatient counseling service.

## Attrition

I surveyed 169 primary health insurance holders at baseline to be included in the experiment sample. Follow-up data are available for 152 primary holders (90 percent of those interviewed in baseline) who were successfully re-interviewed in August 2011. Attrition was due to the following reasons: 5 percent of the primary holders interviewed in baseline were absent, despite repeated visits to their house; 2 percent had moved; and 3 percent refused to answer the follow-up survey.

Attrition at the follow-up survey may cause two distinct problems. If attrition were correlated with the randomly assigned invitation, it would cause impact estimates to be biased, threatening the study's internal validity. If attrition were significantly correlated with baseline characteristics, this would lead the endline sample to be different from the original sample, posing threats to the study's external validity.

Observable household characteristics (previous participation in other programs offered by Calcutta Kids, income, and household size) are not significant predictors of attrition (see Table 3.2); neither are individual characteristics (level of education, occupation, and religion), with the exception of gender. Women are 14 percent more likely to participate in the follow-up survey, perhaps leading to a slight upward bias in the health service take-up. More important, the exogenously assigned health checkup invitation is not significantly correlated with the likelihood of attrition at the follow-up. Thus, although significantly higher male attrition may pose a threat to the study's external validity, threats to its internal validity are limited by the lack of differential attrition associated with the treatment. However, the overrepresentation of men in the original sample (86 percent, as shown in Table 3.2), composed of MHI policyholders, limits the potential threat to external validity.

**Table 3.2 Determinants of attrition**

Variable	Did not participate in the follow-up survey
<i>Household characteristics</i>	
Treatment	-0.0246 (0.0491)
MYCHI	0.0646 (0.0635)
Renewal	-0.0166 (0.0549)
OPCS	-0.0699 (0.0572)
Income	-8.38e-07 (4.10e-06)
Household size	-0.0258 (0.0196)
<i>Primary holder characteristics</i>	
Male	0.143*** (0.0540)
No education	0.264 (0.247)
Some primary education	0.332 (0.243)
Some secondary education	0.329 (0.239)
Secondary education completed	0.246 (0.246)
Self-employed	0.00860 (0.0804)
Regular salaried employee	-0.0154 (0.0771)
Daily wage worker	0.0491 (0.0909)
Unemployed	-0.0523 (0.0878)
Hindu	-0.234 (0.242)
Muslim	-0.232 (0.266)
Observations	169
<i>R-squared</i>	0.178

Source: Author's data.

Notes: MYCHI = Maternal and Young Child Health Initiative; OPCS = outpatient counseling service. Robust standard errors are in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

#### 4. DEMAND FOR FREE QUALITY HEALTHCARE

Between December 2010 and February 2011 (8–10 months after enrollment), 82 randomly selected policyholders and their families were invited to a free health checkup. Of those invited to the health service, 55 attended. The attendance rate was high overall (67 percent), revealing an unmet demand for healthcare. This high rate could result from the high price elasticity of the demand for preventive healthcare (Banerjee and Duflo 2011; Meredith et al. 2013; Cohen and Dupas 2008; Kremer and Miguel 2007), so demand is high when the service is free. Or it could be that slum dwellers usually do not have the resources or access to quality health services, even though they do need curative care. Without ruling out the former, the fact that participants did not substitute the free consultation for one they would have paid for gives credit to the latter explanation, especially the existence of cash constraints in the poor’s access to quality healthcare.

To study patterns of attendance among invitees, I estimate the correlates of the demand for the free health checkup, in addition to the impact of the checkup invitation, by running the following regression:<sup>4</sup>

$$\begin{aligned}
 Attendance_i = & \beta_0 + \beta_1 Treat_i + \beta_2 Ill_i + \beta_3 Consult_i + \beta_4 Ill \times Consult_i \\
 & + CKcontact'_i \beta_5 + \beta_6 Inc_i + \beta_7 Male_i + Educ'_i \beta_8 + Occup'_i \beta_9 \\
 & + Relig'_i \beta_{10} + \beta_{11} HHsize_i + \varepsilon_i,
 \end{aligned} \tag{1}$$

where  $Attendance_i$  is a dummy indicating that at least one household member attended the free health checkup,  $Treat_i$  indicates an invitation to the health checkup for individual  $i$ , and  $Income_i$  is the household’s total income (primary and secondary incomes).  $Ill_i$  is a dummy indicating whether any household member has suffered from an illness and was unable to perform his or her normal activities for two or more days.  $Consult_i$  is a dummy indicating whether any household member had consulted any kind of health provider during the three months preceding the baseline survey (10–13 months before the checkup).  $Ill \times Consult_i$  is an interaction term between the two previous dummies.  $CKcontact'_i$  is a vector of dummies indicating whether the household had a preexisting relationship with Calcutta Kids, either because they subscribed to the insurance product provided by Calcutta Kids the previous year ( $Renewal_i$ ) or because they benefited from the MYCHI program ( $MYCHI_i$ ) or the OPCS program ( $OPCS_i$ ).  $Inc_i$  is the household’s total monthly income.  $Male_i$  indicates that the primary holder of the insurance scheme is a male.  $Educ'_i$  is a vector of dummies indicating that the primary holder of the health insurance product has received some primary education, some secondary education, some tertiary education, or some postgraduate studies.  $Occup'_i$  is a vector of dummies indicating the primary holder’s main occupation.  $Relig'_i$  is a vector of dummies for Hindu, Christian, and Muslim. Lastly,  $HHsize_i$  stands for the number of household members.

Table 4.1 presents the results of an ordinary least squares estimation of equation (1) (column 1) and the marginal effects resulting from a probit estimation (column 2). Although the dependent variable is binary, the linear and nonlinear specifications do not differ much.

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<sup>4</sup> Note that estimates of the correlates’ coefficients indicate patterns of attendance *among invitees* after controlling for invitation, because there are no crossovers between treatment and control groups.

**Table 4.1 Determinants of checkup attendance**

Variable	OLS	Marginal probit
	(1)	(2)
Treatment	0.664*** (0.057)	
Ill	0.271** (0.114)	0.437*** (0.063)
Consulted	0.163 (0.111)	0.316*** (0.056)
Ill x Consulted	-0.498*** (0.182)	-0.956*** (0.015)
MYCHI	0.143** (0.065)	0.195** (0.085)
Renewal	0.037 (0.058)	0.088 (0.099)
OPCS	-0.199 (0.198)	-0.314 (0.241)
Income	0.000 (0.000)	0.000 (0.000)
Male	-0.158** (0.070)	-0.211*** (0.065)
No education	-0.010 (0.108)	-0.140 (0.216)
Some primary education	0.094 (0.103)	0.140 (0.132)
Some secondary education	-0.036 (0.106)	-0.172 (0.190)
Self-employed	0.059 (0.103)	0.053 (0.145)
Regular salaried employee	0.031 (0.107)	-0.042 (0.173)
Daily wage worker	-0.034 (0.096)	-0.135 (0.203)
Trade worker	-0.024 (0.113)	-0.090 (0.245)
Hindu	-0.000 (0.157)	-0.306*** (0.058)
Muslim	0.034 (0.175)	-0.867*** (0.035)
Household size	0.019 (0.017)	0.041 (0.035)
Constant	-0.029 (0.223)	
Observations	169	82
R-squared	0.566	

Source: Author's data.

Notes: OLS = ordinary least squares; MYCHI = Maternal and Young Child Health Initiative; OPCS = outpatient counseling service. Robust standard errors are in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.



After controlling for household characteristics, households invited to the checkup were 66 percent more likely to attend the checkup than households in the control group (Table 4.1, column 1).

Past illness is a strong predictor of attendance: having at least one household member experiencing any type of illness in the three months preceding the baseline survey raised the probability that any household member would attend the checkup by 27 percentage points (Table 4.1, column 1), which is a 60 percent increase. This effect is significant at the 5 percent level. Assuming that the person is still ill at the time of checkup, this finding might reflect that the demand for curative care is significantly higher than the demand for preventive care. However, given that the checkup was offered about ten months after the baseline survey, the person may also be cured at the time of checkup, which would suggest that the poor generally tend to overestimate their health condition,<sup>5</sup> hence the low demand for preventive care, and that experiencing illness leads them to readjust their perception of their own health and place more value on preventive healthcare.

Interestingly, the interaction term between illness and consultation is significantly negative. For those experiencing illness in the household, consulting with any type of doctor (public or private, registered or unregistered) reduces the probability of attending the preventive checkup by 50 percent. Indeed, most consultations take place with unqualified practitioners.<sup>6</sup> Dissatisfaction with the doctor, diagnosis, or treatment might nurture distrust in the medical system, in general, thus lowering the perceived benefits of a consultation and making free healthcare less valuable, especially after experiencing health shocks.

The extent to which trust plays a role in explaining the low demand for preventive healthcare is also visible in the significant and positive impact of previous exposure to Calcutta Kids' health program. Households that benefited from the pre- and postnatal care program (MYCHI) provided by Calcutta Kids are significantly more likely to attend the checkup. Benefiting from this previous program might have reinforced the trust that slum dwellers place not only in Calcutta Kids and their workers but also in healthcare more generally. However, the MYCHI program is offered to all pregnant women and young mothers in Calcutta Kids' catchment area; therefore, instead of a trust effect, one might capture another type of readjustment of people's perception of their own health status whereby pregnancy and infancy, being seen as vulnerable health conditions, make quality healthcare more valuable.

Previous exposure to OPCS, another Calcutta Kids program, does not significantly affect attendance rates. Although this is meant to capture any effect of the quality of the relationship between slum dwellers and Calcutta Kids, it does not rule out the trust effect described previously regarding the MYCHI program. Indeed, the intensity of the MYCHI program is much higher than that of the OPCS program, because the former consists of regular and frequent visits (with approximately one visit to a given household every other month during pregnancy and about three visits during the first year after birth). This gives space and time for building trust and a care relationship between the beneficiary household and the dedicated Calcutta Kids health worker. On the other hand, the OPCS program consists of a single consultation with a registered doctor whose services are temporarily contracted by Calcutta Kids. Therefore, MYCHI appears to be a better proxy for the quality of the relationship and the extent of trust between slum dwellers and Calcutta Kids than does OPCS. Checkup attendance was not affected by previous subscription to the MHI scheme.

Households with a female primary insurance holder are more likely to attend the checkup. This effect is significant at the 5 percent level, which is in line with the view that health tends to be a female domain of responsibility in the household (Delavallade et al. 2013). Income, education, occupation, religion, and household size do not significantly predict attendance.

The effects of attendance correlates are similar when using a nonlinear model, except for religion (Table 4.1, column 2). Hindus and Muslims are significantly less likely to attend the checkup than Christians.

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<sup>5</sup> See Banerjee, Deaton, and Duflo (2004).

<sup>6</sup> The baseline survey is not detailed enough to separate qualified and unqualified private doctors. However, a study conducted by Banerjee et al. (2009) in rural Rajasthan showed that at least 52 percent of the health visits of poorer households are visits to *bhopas* (traditional healers) or unqualified private providers. Another study also carried out in India by Das, Pande, and Zajonc (2012) showed that, overall, healthcare providers provided the correct treatment only 30.4 percent of the time.

## 5. IMPACTS OF ACCESS TO QUALITY HEALTHCARE SERVICES

### Model Estimates

I estimate the effect of getting a free health checkup as part of a MHI scheme on various outcomes: reported willingness to pay to renew the health insurance scheme; health behavior, knowledge, perception, and status; financial situation; trust in and satisfaction with the service provider; and insurance claims. For all of these outcomes, I estimate two kinds of impacts. First, I estimate the impact of being assigned to the treatment group, which is offered the free health checkup;<sup>7</sup> this is the intention-to-treat (ITT) estimate. Second, I estimate the impact of actually attending the free checkup; this is the treatment-on-the-treated (ToT) estimate.

The ITT estimate is obtained by running the following regression for each outcome:

$$Y_i = \alpha_0 + \alpha_1 \text{Invit}_i + X_i' \alpha_2 + \epsilon_i, \quad (2)$$

where  $Y_i$  is the outcome of interest for household  $i$ ;  $\text{Invit}_i$  is a dummy variable equal to 1 if the household was offered a free health checkup; and  $X_i$  is a vector of household characteristics at baseline, including total monthly income, gender and education of the household head, occupation, religion, household size, and dummies indicating whether the household was a beneficiary of other services provided by the NGO (MYCHI or OPCS) or had subscribed to the MHI scheme the previous year.

The ToT effect is obtained by estimating the following model:

$$Y_i = \gamma_0 + \gamma_1 \text{Attend}_i + X_i' \gamma_2 + \theta_i. \quad (3)$$

$\hat{\gamma}_1$  yields the average treatment effect of attending the free health checkup on the set of outcomes. Because the randomization only affected the probability that policyholders' families are exposed to the checkup (invitations were distributed randomly), rather than the checkup attendance itself, I use treatment assignment (invitation) as an instrument for checkup attendance. For each outcome, model (3) is estimated by an instrumental variable regression.

In this experimental setting, compliance is perfect in both the treatment group and the control group. In particular, perfect compliance in the control group (none of the households in the control group were invited to the checkup) entails that the local average treatment effect (LATE) and the average treatment effect on the treated (ATET) are confounded, and the Wald estimator consistently estimates both LATE and ATET.

In addition, policyholders whose family members were more ill at baseline were more likely to benefit from the free checkup. I therefore allow for such heterogeneous treatment effects by estimating the following models:

$$Y_i = \beta_0 + \beta_1 \text{Invit}_i + \beta_2 \text{Invit}_i \times \text{DaysIll}_i + \beta_3 \text{DaysIll}_i + X_i' \beta_4 + \rho_i \quad (2')$$

$$Y_i = \delta_0 + \delta_1 \text{Attend}_i + \delta_2 \text{Attend}_i \times \text{DaysIll}_i + \delta_3 \text{DaysIll}_i + X_i' \delta_4 + \mu_i, \quad (3')$$

where  $\text{DaysIll}_i$  is the total number of days family members were ill during the 90 days before enrollment into the health insurance scheme. This variable gives a proxy for the intensity of the health shocks recently experienced by the household. The results are presented in Tables 5.1–5.7. In each table, Panel A reports the estimates of models (2) and (2'), and Panel B reports the estimates of models (3) and (3').

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<sup>7</sup> There were no crossovers.

## Reported Willingness to Pay to Renew the Health Insurance Scheme

Table 5.1 (columns 3–12) presents estimation results of the impact of the free checkup offer on reported willingness to pay to renew the MHI scheme. The checkup offer has a large, positive, and significant impact on participants' reported willingness to pay. Households invited to the checkup are willing to pay Rs. 60 (US\$1.00) more for the insurance premium than are noninvited households, which is 38 percent more than the average premium that households in the control group are willing to pay (Rs. 159, or US\$2.50).<sup>8</sup> The ToT estimation (Table 5.1, Panel B, column 3) yields an even larger effect: policyholders who visited the wellness clinic and got the checkup report being willing to pay Rs. 81 (US\$1.30) more than those who were not invited, which is 51 percent more. This suggests that policyholders valued the checkup offer and the medical consultation itself even more. Unsurprisingly though, the value that policyholders attached to the checkup was lower than the nominal value mentioned on the invitation voucher (Rs. 350, or US\$5.60).

Willingness to pay to renew the insurance scheme is more elastic on the extensive margin than on the intensive margin. The checkup significantly raised the willingness to pay any positive amount (Table 5.1, columns 5 and 6), though it did not significantly affect the amount reported by those willing to pay some positive amount (Table 5.1, columns 7 and 8). Furthermore, Figure 5.1 shows the Kernel density of distribution of the premium that households are willing to pay to renew the MHI scheme separately for the treatment group and the control group. Figure 5.2 shows the same densities of distribution but for the restricted sample of households willing to pay any premium. A lower share of households in the control group is willing to pay any premium; however, among households willing to pay any premium, the distribution is skewed to the right. Households invited to the checkup are more likely to pay any premium, but they are also more likely to pay a premium less than approximately Rs. 400 (US\$6.40). This finding suggests that the checkup raises demand for the health insurance scheme among poorer households.

Columns 10 and 12 in Table 5.1 show that the more family members ill during the three months preceding enrollment, the more likely it is that the checkup offer and attendance will increase the premium that those households are willing to pay for a health insurance scheme that includes a free health checkup and for a health insurance scheme that includes outpatient care. In other words, getting the checkup not only raised the value attached to the health insurance scheme, it also increased the value that policyholders may attach to the checkup itself and more generally to outpatient care, especially for those with the poorest initial health condition.

The next section examines which benefits the policyholders got from the free checkup that led to its increased perceived value, as well as the increased perceived value of the health insurance scheme to which the checkup was attached.

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<sup>8</sup> As a comparison, Dror, Radermacher, and Koren (2007) reported a median willingness to pay for health insurance of about US\$15 in a study on India, where willingness to pay is measured with a similar unidirectional bidding game.

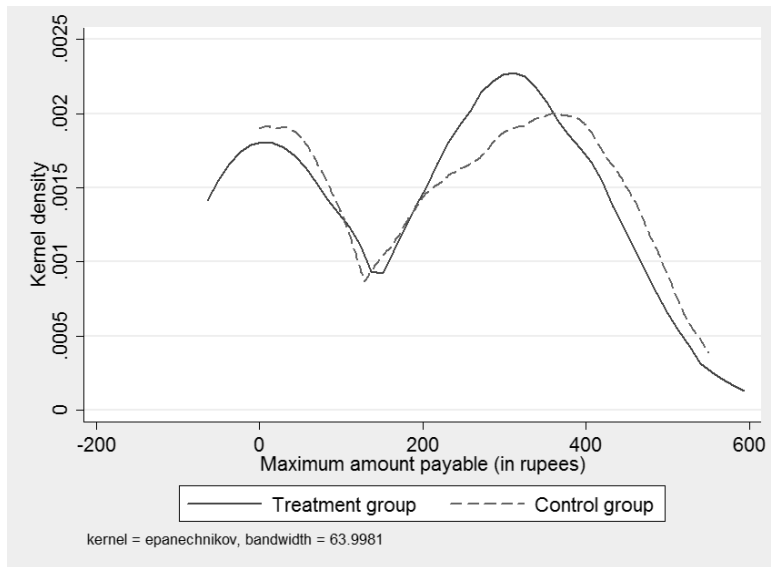
**Table 5.1 Take-up and impact of checkup on willingness to pay for reinsurance**

Dependent variable	First stage		Willingness to pay									
	Attended checkup		WTP to renew HI		WTP any positive amount to renew HI		Amount willing to pay among those with a positive WTP		WTP higher premium if HI includes free health checkup		WTP higher premium if HI includes outpatient care	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<b>Panel A. ITT estimation</b>												
Treatment	0.695*** (0.0586)	0.7371*** (0.0667)	58.15** (28.87)	60.01* (31.62)	0.194** (0.0859)	0.206** (0.0998)	10.31 (14.91)	15.15 (18.19)	-0.00905 (0.0682)	-0.0230 (0.0782)	0.00477 (0.0735)	-0.0717 (0.0859)
Number of Days Ill		0.000647 (0.00106)		1.614 (1.459)		0.000555 (0.00296)		2.523* (1.274)		0.000719 (0.00245)		-0.00261 (0.00190)
Treatment x Number of Days Ill		-0.0103 (0.0244)		-6.920 (4.890)		-0.0183 (0.0240)		-2.359 (4.336)		0.0425** (0.0189)		0.0522*** (0.0102)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	150	122	150	122	150	122	89	70	150	122	150	122
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>												
Checkup			83.72* (43.16)	80.97* (44.30)	17.19 (24.66)	26.07 (27.36)	0.279** (0.130)	0.279** (0.139)	-0.0130 (0.0981)	-0.0238 (0.107)	0.00687 (0.106)	-0.0887 (0.116)
Number of Days Ill				1.562 (1.436)		2.519* (1.280)		0.000375 (0.00295)		0.000731 (0.00245)		-0.00255 (0.00195)
Checkup x Number of Days Ill				-8.290 (6.528)		-8.060 (51.32)		-0.0209 (0.0347)		0.0575** (0.0230)		0.0698** (0.0270)
HH and Primary Holder Controls			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations			150	122	150	122	89	70	150	122	150	122

Source: Author's data.

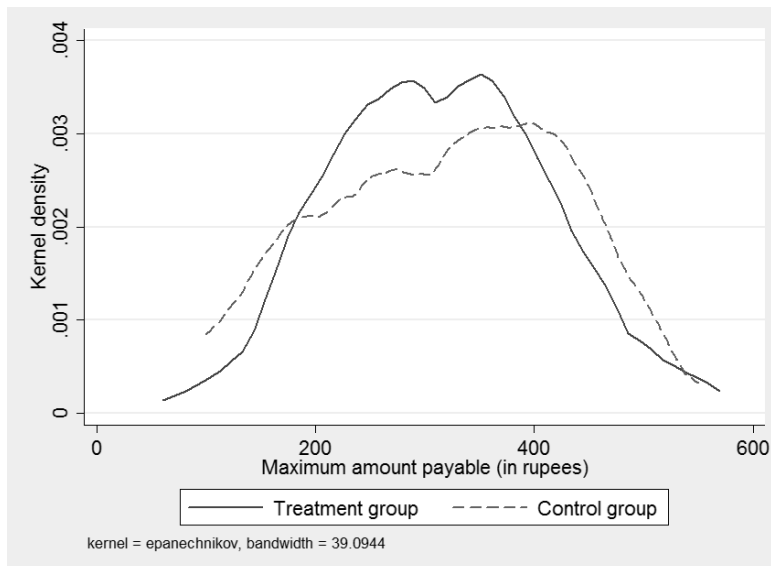
Notes: WTP = willingness to pay; HI = health insurance; HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Figure 5.1 Distribution of willingness-to-pay to renew health insurance**



Source: Author's data.

**Figure 5.2 Distribution of willingness to pay to renew health insurance, intensive margin**



Source: Author's data.

### Health Knowledge and Perception

Table 5.2 reports the estimates of the impact of the checkup offer on health knowledge and self-assessment. The treatment did not significantly affect the knowledge that households have of their own health. Although all participants were weighed at the checkup and had their blood pressure assessed, no additional knowledge was gained on those basic assessments for households attending the checkup (Table 5.2, columns 1–4). The more ill the household members were when they enrolled in the health insurance scheme, the more likely they are to have a better assessment of their own health after the checkup.<sup>9</sup>

<sup>9</sup> This is not capturing an income effect; the impact of checkup attendance is not significantly heterogeneous across income.

**Table 5.2 Impact of checkup on health knowledge and perception**

Dependent variable	Health knowledge				Health perception			
	Know blood pressure		Know weight		Self-assessment of health condition		Whether prefer less-risky health situation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A. ITT estimation</b>								
Treatment	-0.000205 (0.0465)	0.00471 (0.0534)	0.122 (0.0814)	0.0215 (0.0945)	0.198 (0.311)	0.269 (0.344)	0.0947* (0.0539)	0.124** (0.0579)
Number of Days III		-0.000657 (0.000991)		0.00640*** (0.00242)		-0.0237** (0.0113)		0.00642*** (0.00199)
Treatment x Number of Days III		-0.00257 (0.00505)		0.0173** (0.00761)		0.169** (0.0752)		0.00734 (0.00830)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	152	124	150	122	152	124
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>								
Checkup	-0.000299 (0.0679)	0.00609 (0.0742)	0.177 (0.119)	0.0333 (0.131)	0.283 (0.439)	0.397 (0.456)	0.138* (0.0802)	0.175** (0.0819)
Number of Days III		-0.000660 (0.000984)		0.00639*** (0.00241)		-0.0239** (0.0113)		0.00634*** (0.00202)
Checkup x Number of Days III		-0.00341 (0.00724)		0.0239 (0.0146)		0.235*** (0.0486)		0.0124 (0.0198)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	152	124	150	122	152	124

Source: Author's data.

Notes: HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

As expected, households experiencing illness are significantly more likely to report a poor health condition (Table 5.2, column 6). Interestingly, however, the checkup improved the perception that policyholders in a family with a poor health condition have of their own health. This is in line with the view that the poor tend to overestimate the quality of their health (see Chapter 4); although their objective health condition did not significantly improve (Table 5.3), they left the checkup with the feeling that it had. This might be a corollary of the overall satisfaction that treated households felt from the consultation in an environment where access to high-quality healthcare services is typically severely constrained. The stronger impact among households with a poorer health condition might result from the reduction in uncertainty with which the checkup provided them. Self-assessment of health status is based not only on some real knowledge but also on perceptions and uncertainty about one's health. Thus, by providing preventive information and discussing symptoms, but not testing for major diseases, the checkup might have done more to reduce people's uncertainty rather than disclose evidence about people's health condition. Households reporting a poorer health condition at baseline were more likely to benefit from this uncertainty mitigation.

In addition, the checkup seems to have increased the attention and care that households pay to their own health. Households that were offered the medical consultation and, among those, households that attended the consultation are, respectively, 12 and 18 percent more likely to later prefer a less-risky health situation<sup>10</sup> than those who were not offered the consultation or were offered but did not attend (Table 5.2, columns 7 and 8).

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<sup>10</sup> Respondents were asked to choose between the following two hypothetical scenarios: Scenario A—situation in which they have an 80 percent chance of being in *good* health and a 20 percent chance of being in *poor* health; Scenario B—a situation in which they have a 50 percent chance of being in *excellent* health and a 50 percent chance of being in *poor* health.

**Table 5.3 Health status and behavior**

Dependent variable	Health status				Healthcare behavior					
	HH member ill past two months		Days of difficulty of sick HH member past two months		Days before treatment		Consulted a qualified doctor		Recent treatment interrupted	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Panel A. ITT estimation</b>										
Treatment	0.0666 (0.0774)	0.0506 (0.0776)	-0.0322 (2.902)	1.024 (3.232)	8.707 (8.638)	9.055 (9.139)	0.0613 (0.0411)	0.0861* (0.0436)	-0.107 (0.128)	-0.340** (0.162)
Number of Days Ill		0.000451 (0.00369)		0.00640 (0.130)		-0.249 (0.244)		0.00317** (0.00158)		-0.00993*** (0.00318)
Treatment × Number of Days Ill		-0.0590* (0.0315)		-0.437 (0.622)		-3.455 (2.582)		-0.00243 (0.00753)		-0.0302 (0.0591)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	218	179	217	178	217	178	218	179	39	31
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>										
Checkup	0.104 (0.121)	0.115 (0.122)	-0.0499 (4.504)	1.759 (4.801)	13.51 (13.45)	15.25 (14.30)	0.0952 (0.0636)	0.123* (0.0636)	-0.118 (0.139)	-0.354** (0.152)
Number of Days Ill		0.000104 (0.00364)		0.00409 (0.130)		-0.267 (0.240)		0.00319** (0.00160)		-0.00814*** (0.00292)
Checkup × Number of Days Ill		-0.581 (0.943)		-3.561 (6.759)		-27.06 (26.66)		0.0725 (0.144)		-0.00883 (0.0627)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	218	179	217	178	217	178	218	179	39	31
Mean in Control Group										

Source: Author's data.

Notes: HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.



## Health Status and Healthcare Behavior

Table 5.3 also reports the estimates of the impact of invitation and attendance on the health status and healthcare behavior of household members. Note that the number of observations has increased, because I use the long dimension of the data. The observation unit is, in this table only, a health event for one household member. Standard errors are therefore clustered by household.

As mentioned in the previous section, attending the health checkup did not translate into a significant improvement in the beneficiaries' health status (Table 5.3, columns 1–4). This is not really surprising given the short period between the checkup and the follow-up survey (only two months) and the nature of the checkup (a 20-minute consultation).

More important, checkup attendance increases the likelihood that a household member who is sick within the two months preceding the follow-up survey consults a public or private hospital or a qualified private doctor as opposed to a *quack*, a traditional healer, or any other type of private practitioner (Table 5.3, column 8). This impact is significant at the 10 percent level and corresponds to a 12 percent increase in the probability of that household member consulting a qualified practitioner. Being exposed to quality healthcare increases the anticipated differential benefit from consulting a qualified practitioner instead of an unqualified one. Slum dwellers usually have restricted access to good-quality primary healthcare services for two main reasons: such services are rare, and they are costly. Anecdotal evidence regarding slum dwellers' past experience reports that they end up turning to unqualified doctors, even though they know that the quality of the treatment will be inferior, in order to avoid the debt burden that results from taking a loan from a moneylender at an interest rate of 5–10 percent per month (Levinson 2007). However, the results suggest that cost might not be the whole story; experiencing a higher-quality medical consultation increases subsequent visits to qualified doctors.<sup>11</sup> The additional perceived benefit from quality healthcare outweighs the additional cost, which suggests that the absence or lack of exposure to quality healthcare leads people to underestimate the additional benefits they can gain from visiting qualified health services. That perception can be reversed by short exposure. This finding is in line with recent literature, showing that exposure to a service changes the perception of its value and raises the demand for this service (see Beaman et al. [2009] for a study of exposure to female political leaders). Interestingly, whereas exposure to female leaders raises the likelihood of a woman being elected after several years of exposure, here, the behavior change is much faster: visible only two months after exposure to quality care.

Individuals attending the free consultation are also significantly less likely to abandon the medical treatment they have been prescribed before it is completed. Despite the low sample size, this impact is large—a 35 percent decrease. This suggests that beneficiaries did perceive the higher quality of the service, which thus increased their trust in the medical advice provided and their compliance with the treatment.

## Financial Situation

I next estimate the impact of the checkup offer and attendance on various outcomes measuring the households' financial situation. I examine objective outcomes, such as percentage of health expenses, amount of cash assets, savings, and debt, as well as a subjective measure through each household's self-assessment of its own financial situation. These results are presented in Table 5.4.

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<sup>11</sup> This effect is not due to free-consultation attendees being more likely to be prescribed follow-up visits at the checkup. There is no significant difference in the likelihood of attending any type of medical consultation (including the free one) in the six months preceding the endline, neither between treatment and control group nor between attendees and nonattendees among the treatment group. In addition, there is no significant difference that they were prescribed follow-up visits during the consultation. Moreover, even when follow-up visits were prescribed at the free checkup, no instruction was given about which provider the patient should visit.

**Table 5.4 Financial situation**

Dependent variable	Objective						Subjective			
	Percentage of medical expenses over last 30 days		Whether change in amount of cash assets held by HH over past 30 days		Current HH savings		Current HH debt		Self-assessment of HH financial situation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Panel A. ITT estimation</b>										
Treatment	-2.784 (3.822)	-0.419 (4.602)	0.00311 (0.0565)	0.0104 (0.0617)	663.3 (2,332)	1,994 (2,437)	-3,230 (9,676)	-9,229 (11,506)	0.243 (0.251)	-0.0445 (0.266)
Number of Days Ill		0.150 (0.154)		-0.000193 (0.000978)		53.10 (52.92)		-237.1 (213.3)		-0.00134 (0.00754)
Treatment x Number of Days Ill		0.507 (0.583)		0.00682 (0.0133)		-676.5 (550.8)		-1,156 (1,126)		0.251*** (0.0727)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	152	124	51	40	151	123	152	124
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>										
Checkup	-4.062 (5.506)	-0.490 (6.372)	0.00453 (0.0825)	0.0158 (0.0859)	872.4 (3,095)	3,086 (3,271)	-4,609 (13,831)	-12,713 (15,663)	0.354 (0.367)	-0.0145 (0.367)
Number of Days Ill		0.150 (0.154)		-0.000199 (0.000974)		51.19 (56.12)		-229.5 (214.5)		-0.00127 (0.00766)
Checkup x Number of Days Ill		0.683 (0.891)		0.00950 (0.0211)		0 (0)		-1,741 (2,341)		0.342*** (0.0399)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	152	124	51	40	151	123	152	124

Source: Author's data.

Notes: HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

Although the treatment has no impact on objective financial outcomes, the perception of households in a poor health condition of their own financial situation significantly improves in response to the treatment (Table 5.4, columns 9 and 10). Although the income shock does not translate into standard indicators, such as the amount of savings, debt, and cash assets (as I will expand on later), the checkup is *perceived* to be a positive income shock by low-health-status households that attended the checkup (Table 5.4, Panel B), as well as by low-health-condition households that were invited to the checkup (irrespective of whether they attended [Panel A]). This perceived income effect may have driven the increase in the reported willingness to pay both for households who were offered the checkup and for those who attended the checkup. The additional premium that treated households (relative to control households) are willing to pay for a health insurance scheme that would include a free checkup (Rs. 97, or US\$1.50) is equivalent to a 2 percent variation in income, which gives a rough estimate of the low intensity of the perceived income shock.

The checkup had no significant impact on the percentage of health expenses (Table 5.4, columns 1 and 2). The absence of a significant drop in the share of income that households spend on healthcare services and medication indicates that treated households have not substituted the checkup for other consultations (which they would have paid for otherwise) or other types of medical expenses. The free checkup thus acts as an in-kind complement of income for treated households and results in an increase in their absolute consumption of health services. This supports the view that the poor are constrained in their access to quality healthcare; the free checkup slightly released these constraints.

However, as Table 5.4 shows, the checkup offer (Panel A) and attendance (Panel B) do not significantly alter the amount of cash assets held by households (columns 3 and 4), their savings (columns 5 and 6), or the level of their debt (columns 7 and 8). This also suggests that the positive income shock that households seem to perceive does not reflect tangible indicators. An income shock would indeed have led to either an increase in the amount of saving or a decrease in the debt amount, and the variation in savings or debt should have been higher than the income shock to smooth consumption (Townsend 1994).

### **Satisfaction with Health Insurance Scheme, Doctor, and Free Health Checkup**

Table 5.5 reports the estimates of the impact of the checkup offer and visit on the policyholders' satisfaction with both the MHI scheme and the health checkup.

Both the invitation (Table 5.5, Panel A) and the medical consultation (Panel B) significantly raised the level of satisfaction with the MHI scheme for policyholders with a poor health condition at the date of enrollment (column 2). Although there is an increase in satisfaction for all households (column 1), it is not significant at the 10 percent level. As discussed previously, policyholders with a poor health condition are more likely to benefit from the reduction in uncertainty about their health provided by the checkup. Attendees are 12 percent more likely to report that the helpfulness of the free checkup is the main reason for their satisfaction with the health insurance scheme; this effect is significant at the 10 percent level (column 3). In parallel, they are 6 percent less likely to report that the unhelpfulness of the free checkup is the main reason for their dissatisfaction (column 5). This seems to show that the checkup is valued in itself, adding to the perceived income shock in driving the rise in participants' reported willingness to pay.

**Table 5.5 Satisfaction with MHI scheme, doctor, and consultation**

Dependent variable	Satisfied with CK MHI		Main reason for satisfaction: CK checkups helpful		Main reason for dissatisfaction: CK checkups not helpful	
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. ITT estimation</b>						
Treatment	0.0678 (0.0813)	0.0362 (0.0926)	0.0794* (0.0451)	0.0607 (0.0440)	-0.0419* (0.0247)	-0.0326 (0.0240)
Number of Days Ill		-0.00273 (0.00517)		0.00226 (0.00313)		-0.000529 (0.000510)
Treatment × Number of Days Ill		0.0220** (0.00932)		0.0253 (0.0182)		0.00218 (0.00262)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	147	120	152	124	152	124
<b>Panel B. Instrumental variable estimation: Checkup instrumented with “treatment”</b>						
Checkup	0.0979 (0.118)	0.0555 (0.130)	0.116* (0.0658)	0.0896 (0.0609)	-0.0611* (0.0366)	-0.0451 (0.0337)
Number of Days Ill		-0.00277 (0.00515)		0.00223 (0.00314)		-0.000509 (0.000505)
Checkup × Number of Days Ill		0.0307** (0.0148)		0.0357*** (0.0115)		0.00235 (0.00319)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	147	120	152	124	152	124

Source: Author’s data.

Notes: MHI = Micro health insurance; CK = Calcutta Kids; HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

### Trust in Service Provider

To better understand the mechanisms through which a quality medical consultation adds value to a health insurance scheme and increases the demand for quality healthcare, I report results on the impact on trust in Table 5.6. Interestingly, policyholders who attend the checkup are 7 percent more likely to say that they prefer visiting a charitable or NGO doctor when seeking healthcare (column 1). This suggests that the checkup was successful in building trust of the healthcare service provider—an NGO doctor.

In addition, households with a poorer health condition are significantly more likely to declare their willingness to renew the health insurance scheme with Calcutta Kids after being invited (Table 5.6, Panel A) and exposed (Panel B) to the checkup (column 4). Because it serves as an intermediary for the health insurance scheme, Calcutta Kids is also seen as the health insurance provider. Therefore, the free checkup increases participants’ level of trust in the perceived insurance provider. This corroborates findings from a feasibility study conducted by Calcutta Kids prior to the MHI program, which showed that 49 percent of the households indicating interest in health insurance were exposed to Calcutta Kids’ programs previously, whereas only 22 percent of those not interested had a past experience with Calcutta Kids (Levinson 2007).

**Table 5.6 Trust in service provider**

	Preferred healthcare provider: charitable/NGO doctor		Willing to renew CK MHI		Planning to renew MHI with UIIC		Renewed MHI with another company	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A. ITT estimation</b>								
Treatment	0.0461* (0.0244)	0.0469 (0.0299)	0.0200 (0.0726)	-0.00993 (0.0809)	0.0409 (0.0882)	0.0400 (0.100)	0.0126 (0.0390)	0.0263 (0.0475)
Number of Days Ill		-0.000352 (0.000602)		0.00514** (0.00238)		-0.00281 (0.00606)		0.00357 (0.00255)
Treatment x Number of Days Ill		-0.00180 (0.00297)		0.0167** (0.00765)		0.0171 (0.0155)		-0.00277 (0.00328)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	149	121	100	80	151	123
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>								
Checkup	0.0672* (0.0369)	0.0652 (0.0432)	0.0292 (0.106)	-0.0106 (0.112)	0.0570 (0.122)	0.0621 (0.135)	0.0183 (0.0572)	0.0362 (0.0673)
Number of Days Ill		-0.000381 (0.000590)		0.00514** (0.00237)		-0.00267 (0.00579)		0.00355 (0.00257)
Checkup x Number of Days Ill		-0.00156 (0.00350)		0.0226* (0.0123)		0.0235 (0.0265)		-0.00328 (0.00438)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	152	124	149	121	100	80	151	123

Source: Author's data.

Notes: NGO = nongovernmental organization; CK = Calcutta Kids; MHI = micro health insurance; UIIC = United India Insurance company; HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

The impact on the reported willingness to renew the scheme with United India Insurance Company, the actual provider of health insurance, though positive, is not significant, nor is the impact on the reported willingness to renew the scheme with another insurance company. This is also in line with preliminary evidence gathered by Calcutta Kids, showing that most people express distrust toward insurance in general. Scams consisting of selling a fake insurance scheme and running away with the premium are relatively frequent and well-known in the slum, fostering reluctance toward insurance. The offer of a high-quality healthcare service thus encouraged trust in the health and insurance service provider, Calcutta Kids, which translated into an increase in the demand for MHI products from this specific provider; it did not, however, result in an increase in the demand for MHI products more generally. This last set of results suggests that the improvement in trust resulting from the checkup offer has been crucial to increasing satisfaction with the health insurance scheme and, therefore, the reported willingness to pay to renew the scheme. It also suggests that, from the insurance provider's standpoint, offering a free health checkup is all the more beneficial, because it raises the premium that households are reportedly willing to pay (in other words, the demand they face) without raising the overall demand for health insurance (which would benefit insurance providers' competitors as well).

## Claims

Had the free checkup improved the beneficiaries' health condition, the amount of health expenditures and claims to the insurance company might have been reduced. The results reported in Table 5.7, however, show that this is not the case. Neither the amount of claims nor the average monthly amount of expenses claimed to the insurance provider is significantly affected by invitation or attendance to the medical consultation. Again, the short time span between the checkup and the endline survey make it unlikely to pick up these longer-term effects. In the long run, however, given that the consultation seems to improve the quality of healthcare that individuals are seeking, one would expect participants' health condition to improve and health expenditures and insurance claims to decrease.

**Table 5.7 Claims**

Dependent variable	Number of claims after checkup		Average monthly amount reimbursed by insurance after checkup	
	(1)	(2)	(3)	(4)
<b>Panel A. ITT estimation</b>				
Treatment	-0.0406 (0.0750)	-0.0928 (0.0878)	23.12 (58.12)	-7.177 (69.57)
Number of Days Ill		0.00230 (0.00354)		0.0147 (1.795)
Treatment × Number of Days Ill		-0.00886* (0.00503)		-4.479 (3.564)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes
Observations	162	134	162	134
<b>Panel B. Instrumental variable estimation: Checkup instrumented with "treatment"</b>				
Checkup	-0.0612 (0.114)	-0.117 (0.127)	34.87 (87.17)	-4.196 (99.43)
Number of Days Ill		0.00191 (0.00339)		-0.162 (1.720)
Checkup × Number of Days Ill		-0.0625 (0.0846)		-26.31 (36.62)
HH and Primary Holder Controls	Yes	Yes	Yes	Yes
Observations	162	134	162	134

Source: Author's data.

Notes: HH = household; ITT = intention to treat. Robust standard errors in parentheses. \*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

## Cost-Effectiveness

As a tool that simultaneously raises the demand for quality healthcare and the retention of health insurance among the poor, free medical consultations offer a promising avenue for policymakers to improve access to quality healthcare in poor urban settings. In this section, I document the program's cost-effectiveness.

Policyholders invited to the checkup report being willing to pay a significantly higher premium than control policyholders, with an additional premium as high as Rs. 60 (US\$1.00) on average. To what extent does this cover the expenses incurred by the service provider?

The cost of the intervention was estimated at Rs. 205 (US\$3.30) per invited household. This breaks down to Rs. 151 (US\$2.40) for administrative staff and doctors' salaries, Rs. 52 (US\$0.80) for the clinic maintenance and staffing,<sup>12</sup> and Rs. 2 (US\$0.03) for printing and phoning.

Assuming that reported willingness to pay is a good proxy for real payment,<sup>13</sup> the net cost of the intervention amounts to Rs. 109 (US\$1.70) per patient. This net cost does not take into account, however, the benefits from the increased quality of medical services consulted and from the 34 percent reduction in the likelihood of participants abandoning a prescribed treatment, which may well outweigh these costs.

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<sup>12</sup> The NGO used an existing clinic.

<sup>13</sup> Empirical studies have shown that this assumption is quite strong, however, and that reported willingness-to-pay levels tend to overestimate the actual pay when offered a concrete product (Blumenschein et al. 2001).

## 6. CONCLUSION

Low health insurance retention and low use of quality healthcare are two major barriers to access to quality healthcare for the poor. This study analyzes the results from a single policy intervention aimed at tackling both channels. More precisely, it is the first study to analyze the impact of a randomly offered medical consultation with a qualified practitioner on health insurance retention and demand for quality healthcare. Study participants were policyholders of a private health insurance scheme facilitated by the NGO Calcutta Kids; participating households are in a slum close to Kolkata, India. Investigating the determinants of checkup attendance suggests that the demand for preventive healthcare may be increased by improving the perception that individuals have of their own health or that of members of their household and by building trust in and improving the reliability of the health-service provider.

I also assess the impact of the health checkup offer and attendance on a variety of indicators in two directions: the impact on the demand for renewing the MHI and the impact on health behavior. I find that both the offer and the actual medical consultation have a strong positive impact on participants' reported willingness to pay to renew the health insurance scheme. Most of this impact is at the extensive margin; the medical consultation induced more policyholders to be willing to spend a positive amount to renew their health insurance scheme. The increase in the demand for this specific health insurance scheme seems to be driven by two mechanisms: a perceived positive income shock and improved trust in and satisfaction with the NGO providing both the health insurance scheme and the medical checkup. Of equal importance, I find that being exposed to the medical consultation increases the likelihood that household members will consult a qualified practitioner within two months following the consultation.

Although checkup attendance did not improve the knowledge that households have regarding their own health, it did improve the perception that households have of their own financial situation, indicating that the free checkup was perceived as an income shock. However, this income shock was not real: there is no impact on the amount of cash assets, savings, and debt held by the household, and the free checkup was not substituted to payable health expenses. Instead, it came as an additional health service for the household. This suggests that cash constraints are a barrier to access to good-quality healthcare for the poor and that the free checkup helped release these constraints.

The increase in trust in and satisfaction with this particular MHI scheme and provider translated into a positive impact on the demand for health insurance renewal (and an increase in the reported premium that households are willing to pay) only with this specific provider, not with any MHI provider. This suggests that offering insured households with unconditional benefits in the form of a free quality medical checkup is a cost-effective way to both increase demand for quality healthcare and retain policyholders in a health insurance scheme.

Further research should isolate whether this positive impact was driven by facilitating access to healthcare, by offering unconditional benefits, or by reinforcing trust in the service provider. Additional research could also try to separate out the *trust* and *reciprocity* effect that might be confounded in this analysis. Identifying those separately would require several types of lab experiments (Cox 2004).



## APPENDIX: HEALTH INSURANCE POLICY CHARACTERISTICS

### Sum Insured

The sum insured for a family is Rs. 15,000 (US\$240) per year on a floater basis.

### Eligibility

The health insurance applies to a maximum of seven members per household, including the primary policyholder and her spouse, dependent children, parents, and parents-in-law.

The policyholder must be a member of Calcutta Kids Trust. Minimum age at entry is three months old. Maximum age at entry is 70 years old.

### Coverage and Benefits

Payment of a benefit is triggered by the customer's admission to network hospitals for treatment for at least 24 hours in a day. The policy covers hospitalization expenses for illness and disease or injury sustained by the insured person and the members of the family who are covered.

Coverage for preexisting diseases is provided. Reimbursement of out-of-pocket expenses. Expenses are paid on hospitalization for a minimum of 24 hours. However, this minimum time does not apply to treatment for dialysis, chemotherapy, eye surgery, lithotripsy, and tonsillectomy in hospital.

Maternity benefit and childcare are included. There is a limit for expenses to be incurred for delivery—normal delivery is Rs. 2,500 (US\$40), and caesarian section is Rs. 5,000 (US\$80). This amount includes childcare expenses. The maternity benefit is restricted to a maximum of two children and is subjected to a waiting period of ten months from the date of insurance. Posthospitalization is restricted to 30 days.

### Exclusions

In the first year of enrollment in the program, expenses related to the following are excluded according to the terms of the contract between MicroEnsure and Calcutta Kids: cataract, benign prostates hypertrophy, hysterectomy, hernia, hydrocele, fistula of anus, piles, sinusitis, and related disorders. These are covered in subsequent years if the client renews his or her policy.

Expenses related to the following are completely excluded: injury or disease caused by nuclear materials or weapons; invasion, act of foreign army, or warlike operations; intentional self-injury; use of drugs or alcohol; committing, attempting, or provoking criminal offence or participating in a riot; vaccination and inoculation; dental treatment or surgery (except accidental injury requiring hospitalization); spectacles, lenses, and hearing aids; AIDS treatment; vitamins and tonics (unless included in an approved treatment); sterility, venereal disease, and convalescence; circumcision, unless part of necessary treatment; hospital charges that are not related to treatment; voluntary termination of pregnancy, unless failing to do so would likely result in death; rejuvenation of body or mind.

**Table A.1 Premia**

Number of policyholders per contract	1	2	3	4	5	6	7
Total premium (Rs.)	150	220	290	350	400	450	500

Source: Author.

## REFERENCES

- Ahuja, R., and J. Jutting. 2009. "Are the Poor Too Poor to Demand Health Insurance?" *Journal of Microfinance* 6 (1), 1-21.
- Arrow, K. 1963. "Uncertainty and the Welfare Economics of Medical Care." *American Economic Review* LIII (5): 941-973.
- Balarajan, Y., S. Selvaraj, and S. V. Subramanian. 2011. "Health Care and Equity in India." *Lancet* 377 (9764): 505-515.
- Banerjee, A., A. Deaton, and E. Duflo. 2004. "Health, Health Care, and Economic Development." *American Economic Review* 94 (2): 326-330.
- Banerjee, A., and E. Duflo. 2011. "Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty." Published by *Public Affairs, New York*.
- Beaman, L., R. Chattopadhyay, E. Duflo, R. Pande, and P. Topalova. 2009. "Powerful Women: Does Exposure Reduce Bias?" *Quarterly Journal of Economics* 124 (4): 1497-1540.
- Benhassine, N., F. Devoto, E. Duflo, P. Dupas, and V. Pouliquen. 2013. *Turning a Shove into a Nudge: A "Labeled Cash Transfer" for Education*. NBER Working Paper 19227.
- Berman, P. 1998. "Rethinking Health Care Systems: Private Health Care Provision in India." *World Development* 26 (8): 1463-1479.
- Blumenschein, K., M. Johannesson, K. K. Yokoyama, and P. R. Freeman. 2001. "Hypothetical versus Real Willingness to Pay in the Health Care Sector: Results from a Field Experiment." *Journal of Health Economics* 20 (3): 441-457.
- Chankova, S., S. Sulzbach, and F. Diop. 2008. "Impact of Mutual Health Organizations: Evidence from West Africa." *Health Policy and Planning* 23 (4): 264-276.
- Chaudhury, N., and J. Hammer. 2004. "Ghost Doctors: Absenteeism in Rural Bangladeshi Health Facilities." *World Bank Economic Review* 18 (3): 423-441.
- Chaudhury, N., J. Hammer, M. Kremer, K. Muralidharan, and F. H. Rogers. 2006. "Missing in Action: Teacher and Health Worker Absence in Developing Countries." *Journal of Economic Perspectives* 20 (1): 91-116.
- Cohen, J., and P. Dupas. 2008. *Free Distribution or Cost-Sharing? Evidence from a Malaria Prevention Experiment*. NBER Working Paper 14406.
- Cohen, M. 2006. "Community Based Health Insurance Shows Promise in India." Population Reference Bureau. <http://www.prb.org/Articles/2006/CommunityBasedHealthInsuranceShowsPromiseinIndia.aspx>.
- Cox, J. C. 2004. "How to Identify Trust and Reciprocity." *Games and Economic Behavior* 46 (2): 260-281.
- Das, J., and J. Hammer. 2005. "Which Doctor? Combining Vignettes and Item Response to Measure Clinical Competence." *Journal of Development Economics* 78 (2): 348-383.
- \_\_\_\_\_. 2007. "Money for Nothing: The Dire Straits of Medical Practice in Delhi, India." *Journal of Development Economics* 83 (1): 1-36.
- Das, J., P. Pande, and T. Zajonc. 2012. "Learning Levels and Gaps in Pakistan with a Comparison to Uttar Pradesh and Madhya Pradesh." *Economic and Political Weekly* XLVII (26&27): 228-240.
- Delavallade, C., F. Dizon, R. V. Hill, O. Koussihouede, S. Mbaye, and J. P. Petraud. 2013. *Managing Risk in the Sahel with Insurance and Savings*. Mimeo.
- Dreze, J., and A. Sen. 1995. *India: Economic Development and Social Opportunity*. Oxford, UK: Oxford University Press.
- Dror, D., and C. Jacquier. 1999. "Micro-Insurance: Extending Health Insurance to the Excluded." *International Social Security Review* 52 (1): 71-98.
- Dror, D. M., R. Radermacher, S. B. Khadilkar, P. Schout, F.-X. Hay, A. Singh, and R. Koren. 2009. "Microinsurance: Innovations in Low-Cost Health Insurance." *Health Affairs* 28 (6): 1788-1798.

- Dror, D. M., R. Radermacher, and R. Koren. 2007. "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): 12–27.
- Dror, I. 2007. "Social Capital and Microinsurance: Insights from Field Evidence in India." *Microfinance Insights* 5.
- Dupas, P. 2013. *Short-Run Subsidies and Long-Run Adoption of New Health Products: Evidence from a Field Experiment*. Stanford, CA: Stanford University.
- Ensor, T., and S. Cooper. 2004. "Overcoming Barriers to Health Service Access: Influencing the Demand Side." *Health Policy Plan* 19 (2): 69–79.
- Epstein, S. 2003. Cognitive-Experiential Self-Theory of Personality. In *Handbook of Psychology: Personality and Social Psychology*, Vol. 5, edited by T. Millon and M. J. Lerner, 159–184. Hoboken, NJ: John Wiley & Sons.
- Foster, A. D., and M. R. Rosenzweig. 2010. "Microeconomics of Technology Adoption." *Annual Review of Economics* 2: 395–424.
- Gilson, L. 2003. "Trust and the Development of Health Care as a Social Institution." *Social Science and Medicine* 56 (7): 1453–1468.
- Giné, X., R. Townsend, and J. Vickery. 2008. "Patterns of Rainfall Insurance Participation in Rural India." *World Bank Economic Review* 22 (3): 539–566.
- Janssens, W. and B. Kramer. 2013. *The Social Dilemma of Microinsurance: Free-Riding in a Framed Field Experiment*. Tinbergen Institute Discussion Paper 12-145/V. Amsterdam: Tinbergen Institute.
- Jehu-Appiah, C., G. Aryeetey, I. Agyepong, E. Spaan, and R. Baltussen. 2011. "Household Perceptions and Their Implications for Enrolment in the National Health Insurance Scheme in Ghana." *Health Policy and Planning* 27 (3): 222–233.
- Jowett M. 2003. Do Informal Risk Sharing Networks Crowd Out Public Voluntary Health Insurance? Evidence from Vietnam. *Applied Economics* 35: 1153–1161.
- Jutting, J. 2003. *Health Insurance for the Poor? Determinants of Participation in Community-Based Health Insurance Schemes in Rural Senegal*. OECD Working Paper 204.
- Jutting, J. P. 2004. "Do Community-Based Health Insurance Schemes Improve Poor People's Access to Health Care? Evidence from Rural Senegal." *World Development* 32 (2): 273–288.
- Kahneman, D., and A. Tversky. 1979. "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* 47 (2): 263–292.
- Kremer, M., and E. Miguel. 2007. "The Illusion of Sustainability." *Quarterly Journal of Economics* 122 (3): 1007–1065.
- Levinson, N. 2007. *Bypassing the Moneylenders: A Micro Health Insurance Viability Assessment in a Kolkata Slum*. Mimeo.
- McCord, M. J. 2001. "Health Care Microinsurance-Case Studies from Uganda, Tanzania, India and Cambodia." *Small Enterprise Development* 12 (1): 25–38.
- Meng, Q., B. Yuan, L. Jia, J. Wang, B. Yu, J. Gao, and P. Garner. 2011. "Expanding Health Insurance Coverage in Vulnerable Groups: A Systematic Review of Options." *Health Policy and Planning* 26 (2): 93–104.
- Meredith, J., J. Robinson, S. Walker, and B. Wydick. 2013. "Keeping the Doctor Away: Experimental Evidence on Investment in Preventative Health Products." *Journal of Development Economics* 105: 196–210.
- Michielsen, J., B. Criel, N. Devadasan, W. Soors, E. Wouters, and H. Meulemans. 2011. "Can Health Insurance Improve Access to Quality Care for the Indian Poor?" *International Journal for Quality in Health Care* 23 (4): 471–486.
- Morduch J. 1999. Between the state and the Market: Can Informal Insurance Patch the Safety Net? *The World Bank Research Observer* 14: 187–207.
- Oster, E., and R. Thornton. 2012. "Determinants of Technology Adoption: Peer Effects in Menstrual Cup Take-Up." *Journal of the European Economic Association* 10 (6): 1263–1293.

- Pacini, R., and S. Epstein. 1999. "The Relation of Rational and Experiential Information Processing Styles to Personality, Basic Beliefs, and the Ratio-Bias Phenomenon." *Journal of Personality and Social Psychology* 76: 972–987.
- Peters, D., and V. R. Muraleedharan. 2008. "Regulating India's Health Services: To What End? To What Future?" *Social Science and Medicine* 66 (10): 2133–2144.
- Preker, A. S., G. Carrin, D. Dror, M. Jakab, W. Hsiao, and D. Arhin-Tenkorang. 2002. "Effectiveness of Community Health Financing in Meeting the Cost of Illness." *Bulletin of the World Health Organization* 80 (2): 143–150.
- Schneider, P. 2005. "Trust in Micro-Health Insurance: An Exploratory Study in Rwanda." *Social Science and Medicine* 61 (7): 1430–1438.
- Simon, H. A. 1984. "On the Behavioral and Rational Foundations of Economic Dynamics." *Journal of Economic Behavior & Organization* 5 (1): 35–55.
- Thornton, R. L., L. E. Hatt, E. M. Field, M. Islam, F. Solis Diaz, and M. Azucena Gonzalez. 2010. "Social Security Health Insurance for the Informal Sector in Nicaragua: A Randomized Evaluation." *Health Economics* 19: 181–206.
- Townsend, R. M. 1994. "Risk and Insurance in Village India." *Econometrica* 62 (3): 539–591.
- Yip, W., and P. Berman. 2001. "Targeted Health Insurance in a Low Income Country and Its Impact on Access and Equity in Access: Egypt's School Health Insurance." *Health Economics* 10 (3): 207–220.
- Zheng, X., and D. M. Zimmer. 2008. "Farmers' Health Insurance and Access to Health Care." *American Journal of Agricultural Economics* 90 (1): 267–279.





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