Can Beneficiary Information Improve Hospital Accountability? Experimental Evidence From A Public Health Insurance Scheme in India *

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Abstract

We study hospital compliance with a public health insurance program in a large Indian state. Using patient surveys, we first document that participating hospitals regularly charge fees to patients eligible to receive free care, resulting in high levels of out-of-pocket payments in and outside the hospital; and that eligible patients lack information about the program. To test whether information is sufficient to enable intended beneficiaries to hold hospitals accountable, we conduct a randomized phone-based information intervention among approximately 1,100 patients requiring chronic kidney disease management. We find that the intervention effectively increases program awareness and triggers some patients to switch provider, but has heterogeneous impacts on patients' ability to obtain cheaper or more comprehensive care. The intervention dramatically reduced out-of-pocket payments for patients at public hospitals, but not at private hospitals.

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1 Introduction

Health insurance is gaining importance as a policy tool to expand health care access and reduce health-related financial risks in lower income countries. In India, state and central governments have rapidly scaled up public health insurance programs targeting the poor since 2008. Whether these programs are successful at meeting their goals depends on whether hospitals comply with program rules. However, studies to date find that households continue to spend large amounts on health care despite insurance coverage (Rao et al., 2012; Nandi et al., 2017; Sriram and Khan, 2020; Karan et al., 2017).

One explanation for the persistence of out-of-pocket payments (OOPP) may be low awareness of insurance benefits among patients, which may allow hospitals to contravene program rules and charge patients for services that should be free. Increasing "bottom-up" accountability by informing and empowering the intended beneficiaries is often advocated as a way of reducing leakage in public programs and ensuring that citizens receive their full entitlements (World Bank, 2003). Accountability measures may help patients exercise "voice" and claim their benefits from providers and/or exercise choice and "exit" to other providers that better meet their needs (Hirschman, 1970; World Bank, 2003). However, whether such efforts are actually effective depends on the program context. Exit and voice may be costly strategies for beneficiaries in the context of hospital services, where patients depend on providers for life-saving care and may not have many feasible outside options (both if there are few providers or switching providers has health costs). Whether increased accountability changes provider behavior depends on the likelihood of disciplinary action and, for private providers, whether compliance is profitable.

We conduct a randomized experiment to study whether the provision of simple phone-based information to beneficiaries can enable them to hold hospitals accountable and obtain their full entitlements. We study this in the context of the Bhamashah Swasthya Bima Yojana (BSBY), a large, state-run public health insurance program that entitles approximately 46 million individuals in Rajasthan, India, to free care at public and empaneled private hospitals. We focus on patients requiring dialysis care because 1) dialysis is a high frequency, long term, and expensive service, so the potential gains from information are substantial, 2) it is a standardized service,

with relatively little variation in treatment procedure and quality across patients and hospitals, and 3) unlike much of the research, which focuses on primary care, it allows us to study the effects of patient-driven accountability in the context of specialized, life-saving hospital care, where providers may hold considerable power.

Using insurance claims data, we identified dialysis patients in the program and the 91 hospitals (70 private) they were visiting. We conducted phone surveys with 1,113 patients to collect data on their awareness of BSBY entitlements, care-seeking, and OOPP over the previous month. The intervention was delivered by phone at the end of the survey and was designed to strengthen both the "voice" and "exit" channels of accountability. We told patients (or the relative in charge of their care) about their entitlement to free care under insurance, how much the government pays hospitals to provide free dialysis, and the names of up to 3 other participating hospitals within 10 km of their hospital. The intervention was rolled out over two months, and the order in which patients were treated was randomly assigned so that the date of intervention is orthogonal to patient characteristics. Patients were surveyed again 7-8 weeks later to collect outcomes. The staggered rollout allows us to compare outcomes among treated individuals with those yet to be treated (similar to a phase-in design) as well as their pre-treated selves. Given that organizational incentives and factors driving OOPP are different in public and private hospitals, we study heterogeneity in the treatment effects based on whether a patient's primary dialysis hospital prior to the study is public or private.

We first document substantial levels of non-compliance among both public and private hospitals participating in the health insurance program. About 41% of all patients report having had to pay out-of-pocket charges for dialysis care received in the last 4 weeks at their insurance-covered hospital. Furthermore, 41% of patients report having to pay for tests and medicines purchased outside the hospital, even though these are covered under BSBY and should be procured by the hospital and provided free to patients. Overall, 66% of patients had non-zero costs. Total payments at and outside the hospital for dialysis care over the previous 4 weeks average about INR 3,024, or $43. Given that dialysis care is required until death, these costs are substantial for the low-income households targeted by the BSBY insurance scheme. Total payments for patients visiting public hospitals are lower but substantial (INR 2,278, $33) compared to those at private hospitals (INR 3,339, $48). About half of all public hospital patients pay extra for

tests and medicines outside the hospital (largely due to stockouts at the hospital), and these payments comprise 60% of the total payment (this share is 40% in private).

We also document that awareness of insurance entitlements among patients is low, even though patients have been receiving BSBY-covered dialysis care for 6 months on average. Although 91% of patients know of BSBY, only 54% of patients know that BSBY covers all care costs, including hospital fees, tests, and medicines. Awareness levels are broadly similar across public and private hospital patients.

The phone-based information intervention generated large and significant increases in patients' awareness of their entitlements under BSBY (+0.17 standard deviation gain on an awareness index comprised of 6 questions). In response, patients exercised both voice (bargaining with their hospital to reduce their payment) and exit (switching to a different hospital), but these actions did not decrease OOPP on average. However, there is substantial effect heterogeneity by hospital sector. Patients that were visiting private hospitals prior to the intervention saw no change in their payments, even though they were more likely to bargain as well as shop around for and exit to other hospitals. This appears to be because 1) although increases in exit were significant, the majority of patients did not change hospitals (8.9% in the control group and an increase of 5.4pp in treatment), in part because they liked and were willing to pay for the care quality at their existing hospitals, 2) among patients who switched, some switched to non-BSBY hospitals that were more expensive, offsetting the reductions in OOPP among those who switched to public hospitals, and 3) bargaining was not effective, possibly because private hospital prices are not determined by frontline staff and may reflect care costs that are higher than the BSBY reimbursement rate.[1]

On the other hand, patients at public hospitals saw a decrease in total OOPP of INR 800 ($12 or 35%). These patients focused on bargaining rather than exit; this is not surprising, given that patients at public hospitals are poorer and more price sensitive and likely know that costs will not be lower at other private hospitals, even under BSBY.[2] Examining the breakdown of payments reveals that the reduction in OOPP was driven entirely by a decrease

[1] Jain (2021) finds evidence that OOPP charged by private hospitals under the BSBY scheme are at least partially compensating for reimbursement rates that are set too low.

[2] Typically, there is only one tertiary public hospital in each district, so the only reasonably proximate alternatives public patients have are private.

in the likelihood and amount of payment for tests and medicines purchased outside the hospital. Informed patients thus seem to have demanded and obtained their entitlement to free tests and medicines. Increased accountability to patients may have induced hospital staff to exert extra effort to procure the needed items with BSBY funds, as they are officially supposed to do in the event of a stockout. It is also possible they were colluding with pharmacies and labs outside the hospital and discontinued this after the intervention.

We contribute to the literature on the challenges in implementing health insurance in India and lower-income contexts more broadly. We provide new descriptive evidence on widespread OOPP, even among patients and services that are supposed to be fully insured and are paid for by the government. Several evaluations of health insurance in India find it has muted or no effects on patient health expenditures, but have been unable to disentangle the reasons for this (Rao et al., 2012; Mohanan et al., 2013; Karan et al., 2017; Malani et al., 2021). Our findings highlight hospital non-compliance as a contributing factor. While media and policy attention has focused on non-compliance and over-charging by private hospitals, we show that patients visiting public hospitals also face high charges because they cannot obtain their needed tests, medicines, and supplies at the hospital. More generally, studies of insurance have typically examined barriers to enrollment and interventions (including information) that target beneficiaries' decision to enroll (Banerjee et al., 2021; Das and Leino, 2011; Thornton et al., 2010). In a substantial departure, we focus on the role of hospital behavior in implementation effectiveness and whether informing patients can change this.

We also contribute to broader studies documenting leakage in social benefits programs delivered through the public sector (see Olken and Pande (2012) for a review). There is mounting evidence that the organizational structure of public service delivery systems is important for implementation effectiveness, but that agency problems and weak incentives are common (Chaudhury et al., 2006; Banerjee et al., 2008; Das et al., 2016; Dhaliwal and Hanna, 2017).[3] Our findings demonstrate that outsourcing service delivery to private agents to sidestep organizational problems in the public sector comes with its own challenges, and success depends critically on understanding and designing programs around the unique incentives of private actors (Das et al., 2016; Muralidharan and Sundararaman, 2011; Banerjee et al., 2018).

[3]See Dizon-Ross et al. (2017) for a notable exception.

We also add to the literature showing that mobile phones can be used as a low-cost and effective tool for both disseminating information and collecting data for program monitoring (Barrington et al., 2010; Raifman et al., 2014; George et al., 2018; Muralidharan and Sundararaman, 2011). Leakage and "last-mile" service delivery problems are partly due to poor monitoring of front-line workers and service delivery agents. To the extent that governments use data for program monitoring, they rely on administrative data that are generated by service providers, who have incentives to misreport, and that measure inputs or, at best, outputs, but rarely outcomes. Our findings support Muralidharan et al. (2021) in highlighting the importance of collecting data directly from a program's intended *beneficiaries* to measure its performance and showing that phone-based data collection is a feasible way of doing this, particularly as countries digitize social services and beneficiary records.

Finally, we add nuance to the large body of research on social accountability with evidence from a novel setting. Since the 2003 World Development Report "Making Services Work for Poor People", numerous studies have evaluated the effectiveness of efforts to empower citizens to hold service providers accountable, particularly for health and education services, but reviews of the literature find mixed results (World Bank, 2003; Joshi, 2013; Fox, 2015). In an early randomized study of bottom-up accountability, Björkman and Svensson (2009) found that facilitating community meetings and monitoring effectively improved the performance of frontline public health workers and health outcomes in Uganda, with persistent effects after four years (Björkman Nyqvist et al., 2017). But similar interventions implemented a decade later were found ineffective in Uganda (Raffler et al., 2019) and India (Fabbri et al., 2019). An experimental evaluation of a government-implemented social accountability initiative to strengthen primary health care in India finds that information about entitlements improved care-seeking and health outcomes, but that information combined with facilitation of community meetings to address grievances was substantially more effective (Mohanan et al., 2020). All of these studies focus on primary care provided by government health workers.

Our novel contribution is to study accountability in the context of tertiary hospital care, which has received little attention. We study both public and private hospitals, and examine whether an easily scaleable, light-touch information intervention (without in-person efforts to coordinate citizens) empowers patients to take actions that increase hospital accountability and compliance.

We show that information enables patients to exercise both choice and voice, but this is only able to change public hospital behavior, and has no effect on private hospital actions. This illustrates how previous findings on bottom-up accountability from public primary health care may not generalize to private agents, whose incentives are different, nor to contexts of higher-level, life-saving care, where hospitals may hold substantial power over patients. Our results suggest that patient-driven accountability interventions are an important but insufficient tool to improve the effectiveness of public health insurance programs for hospital care. In these contexts, "top-down" monitoring and the careful design of incentives for participating hospitals, both public and private, may be an important supplementary intervention to ensure target beneficiaries receive their full program benefits.

2 Study Context

2.1 The BSBY Program

The Bhamashah Swasthya Bima Yojana (BSBY) government health insurance program was launched in December 2015 in the state of Rajasthan, India.[4] The program entitles poor households to free coverage of approximately 1,400 hospital services, including dialysis. Households that meet state poverty criteria are eligible and automatically enrolled, and can obtain benefits using the household Bhamashah card.[5] They face no premium or co-pay, and can get care up to an annual value of INR 330,000 (approximately $5,000) per household.[6] They can get care at any public hospital and participating ("empaneled") private hospital in the state. Private hospitals must fulfill basic size and quality criteria in order to be empaneled. They can choose whether to empanel in the program, as well as whether to accept patients once empaneled. The program follows a prospective payment system, where hospitals are paid at prespecified rates for each service, which cover all associated tests, medicines, and hospital costs so that patients

[4] In September 2019, BSBY was renamed the Ayushman Bharat Mahatma Gandhi Rajasthan Swastya Bima Yojana (AB-MGRSBY).

[5] The Bhamashah card, which identifies all members of a household and is linked to their national biometric unique identification numbers (Aadhar) and a household bank account, is issued to all households in Rajasthan and is used for delivery of several public benefits, including pensions and food assistance.

[6] Annual coverage limits for insurance coverage are a common feature of health insurance programs in India and are intended to prevent egregious fraud. In practice, less than half of one percent of households spend 90% or more of their annual limit.

pay nothing. The same amount paid to the hospital is deducted from the patient's annual benefit. A single public sector insurance company is the Insurer and administers the program. By early 2018, when our experiment was launched, over 2.2 million claims had been filed and 1,356 hospitals were participating, 872 of which were private.

The program has been widely publicized through billboards, radio and print advertisements, and government village health workers. Participating hospitals are required to display government-issued posters indicating that they are empaneled under BSBY and ensure that all BSBY-eligible patients are identified and told about their entitlements upon admission. Hospitals are also supposed to have patients sign a system-generated receipt indicating the value of their care (the amount reimbursed to the hospital and deducted from the patient's annual benefit balance) and certifying that they received it at no additional charge. A free phone helpline is available for assistance with questions about eligibility and benefits. However, field visits conducted by the research team in late 2017 revealed that implementation of these initiatives was weak and awareness among eligible households remained low. Patients were unaware of the helpline. Promotional materials did not clearly specify program details, such as which services are covered, or which hospitals are empaneled. There was little oversight of hospitals and their interaction with the patient. As a result, beneficiaries were generally aware of BSBY's existence but not of their entitlements or other information required to hold hospitals accountable. Our survey results confirm these qualitative findings (discussed in section 4).

2.2 Hemodialysis

Dialysis is the process of blood filtration required by patients with loss of kidney function. Patients typically require dialysis sessions 2 to 3 times a week, with each session lasting 3 to 4 hours, for the rest of their lives or until they get a kidney transplant (extremely rare in our study context). Treatment also requires regular medicines and monthly blood tests. In our context, referrals from a doctor are not required to get dialysis and walk-ins are accepted. Under BSBY, hospitals are reimbursed INR 1,500 to 2,000 per dialysis visit, inclusive of all tests, medicines, dialysis, and hospital costs, which is similar to rates under public insurance programs in other Indian states (Kaur et al., 2018). Data on dialysis prices are limited, but studies estimate that uninsured patients pay between INR 2,000 and 2,500 per dialysis visit,

including tests, medicines, and hospital fees (Bradshaw et al., 2019; Suja et al., 2012; Kaur et al., 2018).

2.3 Public and Private Hospitals

Public and private hospitals in our context have very different operational and financial structures that are likely to affect their incentives under BSBY and their potential responses to patients.

Public hospitals provide free or very low-cost care, and serve as safety net hospitals in the health system, catering to the poorest and sickest patients who cannot afford care at or are turned away by the private sector (Parameswaran et al., 2011). However, fixed salaries, limited oversight, and low threat of dismissal create weak financial incentives and contribute to low effort and low care quality (Chaudhury et al., 2006; Das et al., 2014). Since there is typically only one public hospital per district, such patients may not be in a position to seek care anywhere else if they are not satisfied with the service. Public hospitals do not generate their own revenue and are funded by annual public budgets that are unrelated to patient flows. Although they are reimbursed under BSBY, their access to these funds is very restricted: funds cannot be used for staff compensation or general expenses, but if a BSBY patient requires items, such as medicines, that are unavailable at the hospital, staff are supposed to use BSBY funds to procure them from outside so that the patient pays nothing. In practice, the bulk of BSBY disbursements to public hospitals is returned to the government. OOPP at public hospitals could either be due to frontline health staff soliciting illicit payments from patients (either explicitly as bribes or implicitly as fees for services that should be free), being unwilling to exert the effort required to procure items for patients, or colluding with external private pharmacies and labs to send patients there for extra services. Public hospitals have an incentive to respond to patient voice (bargaining or complaints) if the threat of disciplinary action is credible, but they don't have an incentive to respond to exit, since this does not affect their compensation.

In the private health sector in India, barriers to entry are relatively low, regulation is minimal, private insurance coverage is very low, and prices are largely determined by the market. Care quality is typically higher at private than public hospitals, in part due to stronger financial incentives (Das et al., 2016). Although many private hospitals empaneled in BSBY, dialysis

hospitals are typically large, multi-specialty for-profit hospitals located in urban centers that provide complex tertiary care services.[7] Many are apex referral hospitals in their regions. Private hospitals may have incentives to flout the program rules and charge patients if BSBY reimbursements are too low to cover their costs or because they have power (market or social) over the patient. Private hospitals have an incentive to respond to exit if it reduces their profits and to voice if the threat of exit is real.

3 Study Design, Data, and Descriptive Statistics

3.1 Sampling and Sample Characteristics

Through a Memorandum of Understanding with the Government of Rajasthan, we obtained access to administrative data on every insurance claim filed under the BSBY program. These confidential data include information on the hospital (name, public or private, and district location), service provided (service code, date of claim filing), and patient (ID, name, age, sex, and phone number). Using these data, we identified all 1,201 patients with a BSBY insurance claim for a dialysis visit between February 1, 2018 and March 21, 2018 ("sampling period"). Of these, 1,113 had a phone number recorded along with their claims and were included in the study.[8]

Based on the claims filed during the sampling period, we identified each patient's "primary hospital", or the hospital they visited most often for dialysis (N=91 primary hospitals). As we show below, patients overwhelmingly visit only one hospital, so the identified primary hospital is where patients get most or all of their dialysis care under BSBY.

Panel A of Table 1 presents hospital characteristics from the administrative claims data. Twenty-one of the 91 hospitals in the study are public (23%). Public hospitals have been in BSBY for over two years, since they were automatically included when the program was launched in December 2017, whereas private hospitals joined the program over time. On average, public hospitals have a higher patient load (446 patients per month compared to 153 in

[7] Non-profit or "charitable" hospitals account for a very small share of all hospitals and for less than 3% of hospital visits in the country (NSS 75th round).

[8] 597 patients with dialysis claims in this period had already been sampled for surveys as part of another project and were excluded.

private), but both public and private hospitals have about 12 BSBY dialysis patients included in our study, indicating that dialysis patients comprise a small share of the total hospital patient load. Private hospitals have 2 neighbor hospitals compared to 1.5 in public hospitals, reflecting their greater concentration in towns and cities. Panel B of Table 1 presents patient characteristics from the administrative data, splitting patients by whether their primary hospital is public or private. Patients have been receiving dialysis at BSBY hospitals for about 25 weeks on average, 68% visited only one BSBY hospital ever, and the majority had a private primary hospital (70%).

Panel C of Table 1 presents descriptive patient characteristics from the pre-intervention and pure control surveys. The patient population is largely male (68%) and middle-aged (44 years) with little education (6 years on average). Patients visiting public hospitals are significantly poorer and more likely to be low caste (25% in public relative to 18% in private). Both the duration and frequency of dialysis care are lower among patients at public hospitals, which probably reflects their worse health and relative poverty. Although care is long term and high frequency, search and bargaining appear to be limited. Around a third of patients ever visited more than one BSBY hospital for dialysis, 17% report they ever bargained with their dialysis hospital to reduce prices (this is substantially higher in private, at 21%, than public, at 6%), and 7% sought dialysis at a hospital other than their primary hospital in the 4 weeks before the pre-intervention survey. Patients at public hospitals chose them for their low price, while those at private hospitals prioritized quality. Consistent with this, standardized indices of both technical and perceived care quality are significantly higher at private than public hospitals. Earlier, we noted that Table A.2 shows a significantly higher confirmed death rate among public hospital patients (21% vs 9% in private), which may be due to their worse health as well as the lower quality of care they receive there. Overall, all measures point to the relative vulnerability of patients visiting public hospitals.

3.2 Information Intervention

We conducted a randomized experiment to examine whether simple phone-based information can effectively increase patient awareness of program benefits, and whether patients can use this information to obtain their entitlement to free care. Households of patients selected for the

treatment were provided information about their entitlements under BSBY and the names of up to 3 other participating dialysis hospitals near their primary dialysis hospital. To identify nearby hospitals, we geocoded hospital locations through the Google Maps API and identified up to 3 closest hospitals within a 10-kilometer radius of each primary hospital ("neighbor hospitals").[9] 18 out of 91 primary hospitals did not have any hospitals within 10km (see Panel A of Table 1), so the information message for patients at these hospitals did not include neighbor hospitals (22% of the sample). Both because the information content is slightly different for this sub-sample and because information effects may be muted (these patients likely have fewer outside options, hence lower bargaining power), we later test heterogeneity by whether the primary hospital has any neighbor hospitals to see whether effects are driven by the sample with neighbors.

Surveyors were trained to deliver the following script over the phone:

"I would like to give you information about the Government of Rajasthan's BSBY scheme. The program covers the full costs of dialysis, including hospital care, tests, and medicines. You and your household are eligible. You just need to show your Bhamashah card number. All public hospitals and many private hospitals are included in the program. [Primary Hospital], where you have gone for dialysis before, is included. The hospital receives 1,500 to 2,000 rupees from the BSBY program for each of your dialysis visits. **[If there are any other BSBY hospital within 10 km: *These are the names of other hospitals that are within 10 kilometers of [Primary Hospital], and that are also included in the BSBY scheme: [Hospital 1], [Hospital 2], [Hospital 3]. Dialysis and related tests and medicines should be free under BSBY at all these places.*]** *If you have any other questions about the Yojana, you can ask the Anganwadi center or any public hospital or you can call the 1800-180-6127 number for free information."*

Surveyors probed respondents to confirm they had understood that it meant the cost of dialysis and associated care under BSBY should be free. Patients were also sent the following SMS messages summarizing the information to aid with recall and serve as a potential reference in negotiations with hospitals:

Under BSBY your dialysis, tests, and medicines should be free. The hospital receives between 1,500 and 2,000 rupees from the scheme for each of your dialysis visits. These hospitals close to you do dialysis and are included in the scheme: [Primary Hospital], [Hospital 1], [Hospital 2], [Hospital 3].

[9] Although it would have been optimal to provide information on hospitals closest to the patient's residence location, rather than to their primary hospital, accurate residence location data were unavailable at the time of the study.

3.3 Experimental Design

Three quarters (845) of sampled patients were randomly selected to receive the information treatment, and one quarter were assigned to "pure control". Treatment patients were randomly assigned to two groups because we were initially planning a two-stage design with a different treatment in the second stage. However, we decided against the second treatment for ethical reasons and both groups received the same information intervention and are pooled in the analysis.[10]

Treatment patients were provided the information intervention at the end of an initial phone survey ("pre-intervention survey"). Given a limited survey team, all patients could not be called and treated at once. Instead, treatment was rolled out continuously and the date of the pre-intervention survey + information provision was randomly assigned to ensure that when a person was treated is orthogonal to their characteristics. These patients were called again 7-8 weeks later (in as close to the original random order as logistically possible) for a "post-intervention survey" to collect data on outcomes. The pure control group was surveyed last and was not provided information to allow us to compare their longer-term care-seeking behavior in the claims data with those that were treated. This staggered rollout (shown in Figure A.1) allows us to estimate treatment effects by comparing treated individuals with those yet-to-be-treated, as well as their own pre-treatment selves, which increases statistical power, since expanding the sample size was not an option (the study includes all eligible dialysis patients found in BSBY claims).

Patients were stratified by their primary hospital (the hospital they visited the most in the 7 weeks preceding the study) before randomization.[11] Since there are considerably fewer patients whose primary facility is public, we over-sampled such patients to receive the intervention to maximize power to detect effects by hospital sector: 83% of public patients were sampled for

[10] As noted in our registered study plan, we originally planned Treatment 1 to be a "basic" information intervention, as described in this paper, that would be rolled out in the first stage, after a survey. Treatment 2 would be a "detailed" information intervention including the average prices charged by nearby dialysis hospitals based on data collected in the first stage and from another concurrent study, and would be rolled out in the second stage. However, health experts warned us that providing prices without quality information (which is hard to collect reliably by phone) could shift patients towards cheaper but lower quality hospitals that might worsen their health. For this reason, we provided the basic information to both treatment groups and rolled it out continuously instead of in stages.

[11] 14 patients that were the sole patients in their hospital were grouped into two strata, grouping those with and without neighbor hospitals, before randomization.

treatment vs. 73% of private patients. We control for primary hospital sector in all pooled specifications and also present all results separately by hospital sector.

3.4 Data and Outcomes

The key outcomes of interest are awareness of BSBY and OOPP. Since the claims data do not include information on patient awareness or details of the patient-provider interaction, we conduct patient surveys to collect outcomes. As noted earlier, patients assigned to treatment were surveyed once just before the information provision ("pre-intervention survey"), and again 7-8 weeks later to collect outcomes ("post-intervention survey"), while those assigned to the pure control group were only surveyed once (for simplicity we also call this the "pre-intervention survey" because we pool these data to present pre-intervention statistics on the entire study sample in Table 1). Using the phone numbers recorded in the administrative claims data that we used to sample patients, we conducted phone surveys to collect data on dialysis care, awareness of BSBY benefits, out-of-pocket payments (OOPP), care quality, and socioeconomic and demographic characteristics. Surveyors were instructed to call each phone number a minimum of five times over at least three different days before declaring it unreachable. Surveys were conducted directly with the dialysis patient to the extent possible, or with a proxy aware of the details of treatment if the patient was unable or unwilling.

We measure awareness through indicators for whether the patient knows that BSBY covers all costs of care, the costs of dialysis, and the costs of tests and medicines; whether she knows the amount that a hospital is reimbursed (and that is deducted from her annual benefit balance) for each dialysis visit under BSBY.[12] For patients at hospitals with neighbors, we also include a dummy for whether the patient knows of at least one BSBY participating hospital near her pre-intervention primary hospital. We combine these into a single BSBY awareness index following the methods in Anderson (2008). Measures of OOPP cover the 4 weeks prior to the survey and include the probability of any payment and the total amount paid, whether these payments included payments for tests, medicines, and direct payments to medical staff, and

[12]Because the amount reimbursed to a hospital for a dialysis visit is also deducted from the patient's annual benefit balance, patients should be informed of the reimbursement amount. To this end, the government requires hospitals to provide patients a printout of an auto-generated invoice from the BSBY system that specifies the service(s) provided and the amount paid to the hospital by BSBY, but this is difficult to enforce and patient interviews suggest that many hospitals are not doing this.

the probability and amount of payment for additional tests and medicines relating to dialysis obtained outside the hospital (typically at private pharmacies or diagnostic centers).

To understand the mechanisms driving potential effects on OOPP, we classify patient responses into "voice" and "exit" strategies (Hirschman, 1970). To measure voice, our survey asked whether the patient attempted to bargain with the hospital to lower prices. Our measure of exit is a hospital switching index, which includes dummies for whether the patient tried a new hospital (not among those she had visited prior to the study), switched to a different primary hospital from the one at the start of the study, switched to a non-BSBY hospital, and switched hospital sectors (public to private or vice versa).

Finally, we examine whether the intervention has an effect on care quality. If hospitals lower OOPP, they may also lower quality to cut costs. On the other hand, hospitals that do not lower OOPP may improve quality as an alternative way of satisfying patients. We create an index of care quality for the patient's (current) primary hospital, which includes whether the patient had any infection or any bleeding from the fistula (where the dialysis tubes are inserted); wait time before receiving care; length of the dialysis session (3 hours is typically the minimum sufficient duration); and whether the patient was attended to by medical staff (doctor or dialysis staff). We also construct an index of the patient's perceived quality at the primary hospital, which includes indicators for whether a patient reports that the facility was very clean, staff were very respectful (options for both were very good, good, okay, not good, and bad), she was very satisfied with the price and quality of care (options were very satisfied, somewhat satisfied, somewhat dissatisfied, and very dissatisfied), and whether she would recommend the facility to others.

3.5 Empirical Specifications

We estimate treatment effects as follows:

$$y_{iht} = \alpha + \beta_1 * Treatment_{it} + Z'\gamma + \delta_h + \epsilon_i \tag{1}$$

where y_{iht} is the outcome at time t for patient i sampled from hospital h; $Treatment_{it}$ is a dummy equal to 1 if the patient was assigned to receive the information treatment prior to t; Z

is a vector of controls including patient gender, age group, average dialysis visits per week in the 6 weeks prior to the survey, total weeks on dialysis under BSBY (since January 2017), whether the patient's primary hospital at sampling is private, and whether the survey respondent is the patient herself. Because dialysis patients need monthly tests that are typically done at the beginning or end of the month, we also control for whether the survey was done on the first week or last week of the month. Finally, δ_h is a set of hospital (stratum) fixed effects. As noted earlier, treatment individuals were surveyed twice, just before the information provision and again 7-8 weeks later. We therefore cluster the standard errors at the individual level. Given the staggered roll-out, the first group of pre-intervention surveys was conducted well before the last group of post-intervention surveys. Since the entire study took place over just three and a half months, time trends are unlikely to be a major concern; nevertheless, we conduct a robustness check dropping the pre-intervention surveys conducted in April, and another robustness check including a linear time trend.

Because we expect the effects of information to vary by whether the patient's primary facility at sampling is public or private, we also estimate a specification that allows for heterogeneity in treatment effects by primary hospital sector at sampling as follows:

$$y_{iht} = \alpha + \beta_1 * Treatment_{it} * Private_i + \beta_2 * Treatment_{it} * Public_i + Z'\gamma + \delta_h + \epsilon_i \quad (2)$$

where $Treatment_{it} * Private_i$ is a dummy equal to 1 if the patient was assigned to receive the information treatment prior to t and had a private primary dialysis hospital; $Treatment_{it} * Public_i$ is the same for respondents with a public primary hospital.

3.6 Balance and Attrition

We use pre-intervention characteristics from the administrative claims data to test balance. Panel A of Table A.1 shows balance on the full sample. Attrition was substantial (33%) and due largely to wrong or invalid phone numbers in the administrative data, or to deaths by the time of the survey, as shown in Table A.2.[13] Among those surveyed, the likelihood that the

[13] 19% of households could not be reached at all. This is largely due to wrong or invalid phone numbers in the administrative claims data (18%) and only 1% were due to refusals. An additional 12% of patients were confirmed dead at the time of survey by someone else in the household.

patient herself was surveyed was 50% (34/68), with the rate lower among very sick patients and female patients, who typically have less access to phones and for whom their male spouses are more likely to respond. Survey success rates are also lower among public hospital patients, largely due to higher death rates. However, the attrition rate, or the likelihood of reaching the household and speaking to the patient herself, was not differential across the treatment and control groups (see Table A.3). Furthermore, the pre-intervention characteristics of non-attriters are not different between the treatment and control groups (see Panel B of Table A.1), alleviating concerns that attrition caused compositional changes. Panels C and D of Table A.1 show that baseline characteristics are balanced across treatment and control within each of the public and private primary hospitals sub-samples we use for heterogeneity analysis.

Table A.2 also presents statistics on delivery of the information treatment. Recall that the information treatment was provided by phone at the end of the pre-intervention survey. Given the survey success rate discussed above, only 74% of the 845 patients in the treatment group were successfully provided the information. In approximately a third of cases, the information was provided directly to the patient, while in the remaining cases, the information was provided to a close relative involved with the patient's care and treatment.

3.7 Descriptive Statistics: Low Awareness and High OOPP

Panel D of Table 1 presents descriptive statistics from the pre-intervention surveys on awareness and OOPP. Although 91% of patients have heard of BSBY, awareness of their specific entitlements under the program is much lower. Despite the fact that patients have been using BSBY for half a year, just above half (54%) know that the program covers all costs of treatment and less than a quarter (22%) know how much a hospital is reimbursed for each dialysis visit. Given that BSBY entitles patients to free care, the magnitude and prevalence of patient OOPP is striking. 41% of all patients faced a payment at their hospital, a similar share had to pay for tests and medicines procured outside their hospital, and total OOPP in the 4 weeks prior to the survey is slightly over INR 3,000 ($45).

The composition of payments is heterogeneous by hospital type. Patients at public hospitals are significantly less likely to have to pay at their hospital (18% and INR 968 compared to 51% and INR 2,057 in private), but are significantly more likely to have to purchase tests

and medicines outside their hospital due to unavailability at the hospital. Overall, they pay significantly less (INR 2,278) than those at private hospitals (INR 3,339), although this may still be a high percent of their income because they are poorer.

4 Impacts of the Information Intervention

4.1 Direct Impacts

We present the main results in Table 2. Panel A shows the average treatment effects estimated from Equation 1 and Panel B shows the treatment effects separately by hospital sector, estimated from Equation 2.

The information intervention succeeded in increasing awareness: there is a 0.171 standard deviation increase in the composite index of 5 questions measuring patient awareness of BSBY entitlements (treatment effects on each component are shown in Table A.4). Columns 2 and 3 of Table 2 show that the information treatment led patients to use both exit and voice strategies: we see large and significant increases in the hospital switching index (the breakdown is provided in Table A.5) and the likelihood of bargaining with the hospital. Despite these behavioral responses, we see no clear evidence of a decrease in either the likelihood or the amount of out-of-pocket charges patients faced in the last 4 weeks or at their last hospital visit (Columns 4-6 of Table 2).

However, these average treatment effects mask important heterogeneity by hospital sector, as shown in Panel B of Table 2. The information treatment had a similar impact on the awareness index for the two types of patients (though the breakdown in Table A.4 shows that different dimensions of awareness were affected for each group, which we will return to), but the patient's strategic responses were different. Among patients with a private primary hospital, the hospital selection index increased significantly, indicating that they used "exit" strategies. The breakdown of the index in Table A.5 shows that private patients were 5.6 percentage points (47%) more like to try a new hospital and 5.4 percentage points (61%) more likely to change their primary hospital, either because they switched to a public hospital or left the BSBY scheme altogether and sought dialysis care at a non-empaneled hospital. We don't observe similar

exit strategies among public sector patients, but do find an increase in bargaining (Column 3). Patients at public hospitals are poorer and more price sensitive, so it is not surprising that they chose to stay and bargain rather than exit; they may have believed (rightly, as we show) that other private hospitals would only charge them more OOPP, even under BSBY. Private sector patients were ultimately unable to reduce their cost of care on average, while public sector patients saw a large decrease in average OOPP (see cols 4-6 of Table 2). Examining the full distribution of OOPP for public and private patients by treatment status in Figure A.2 suggests the public sector effect is driven by more patients being charged nothing or a small amount. We show in Figure A.3 that results on all key outcomes are robust to the choice of econometric specification, and, reassuringly, driven by the "compliers" who could be reached and given the information treatment.

How did OOPP decrease for patients in the public sector? Table A.6, which presents the breakdown of payments, first establishes that the decrease is not just mechanically due to a decrease in the number of visits in the last month (column 1). It also shows that there was no significant reduction in payment at the hospital; instead, the effect on OOPP is mostly explained by decreases in the likelihood and amount of payment tests and medicines purchased outside the hospital. In other words, the increase in bargaining reported above appears not to have been effective at reducing hospital charges; indeed, patients themselves report that their bargaining attempts had no effect (Table 4, Panel B). But it did change provider behavior in other ways: hospital staff stopped sending patients elsewhere for tests and medicines. Increased accountability to informed patients may have induced public hospital staff to exert the greater effort required to procure needed tests and medicines, either by ensuring hospital stocks don't run out or by using BSBY funds to procure them from outside so that patients pay nothing (as they are supposed to do in the event of a stockout). It is also possible that hospital staff were colluding with external pharmacies/labs to send them BSBY patients and were less inclined to do this with informed patients. It is unclear why the intervention had an effect on this margin but not on charges at the hospital, but it is worth noting that direct payments to hospital staff are rare and a very small part of the costs, suggesting that explicit bribe requests, which we would expect to be responsive to increased accountability, are not driving OOPP at the hospital (Table A.6 shows the breakdown of OOPP at the hospital).

While public patients were able to lower costs on average, this does not seem to have come at the expense of care quality: Table A.7 shows no change in infection, wait time, dialysis duration, or attendance by medical staff, but these may be imperfect measures of quality and estimates are noisy. Interestingly, we do observe a decrease in patients' perception of their experience at the hospital, particularly their satisfaction with cleanliness and cost, which may be because patients that are now aware of their entitlement to free care are dissatisfied with a hospital that continues to charge (many patients still face non-zero OOPP).

Why did OOPP remain unchanged on average for patients who started in the private sector? As discussed above, some treated private patients exited the BSBY scheme and sought care at non-empaneled hospitals, while others switched to public hospitals. Table A.8 shows that patients who exited BSBY faced higher OOPP than those who stayed at their primary hospital, while those that switched to the public sector faced substantially lower OOPP, so these effects may have offset each other. Excluding OOPP for dialysis care at non-BSBY hospitals, we still find no negative effect of the information treatment on average OOPP (col. 6 of Table 3), which means that OOPP did not decrease even for those who continued seeking dialysis care at BSBY-empaneled private hospitals.

The failure of the information intervention to affect OOPP among private hospital patients may be due to a combination of demand and supply side factors. On the demand side, it is possible that patients were willing to pay for what they believed to be higher quality care: the private sector patient sub-sample is wealthier, is more likely to already have bargained with their hospital, and has higher technical and perceived quality of care (Panel C of Table 1). This could explain why the majority of the private patients did not switch to the public sector in response to the information.[14] Additional summary statistics in Panel A of Table 4 show that patients in the private sector put substantially more weight on quality and less weight on price than public sector patients. In hypothetical questions asking patients to choose between two facilities, trading off public and private or two private hospitals at different price points, private patients strongly prefer private (and public patients strongly prefer public) when the two facilities charge the same price (INR 2,000) and a third of them would stick with the private

[14] 69% of patients whose primary hospital was private and had neighbors were given the name of at least one public hospital as part of the information treatment. See Panel A of Table 1.

facility even when the public facility is free, and therefore INR 2,000 cheaper. This may be because they are more likely to think that price is a signal of quality than public sector patients. Private patients who did not want to change their facility may also not have wanted to bargain: Panel B of Table 4 show that most patients who chose not to bargain even though care was not free are satisfied with the price and/or quality of their current hospital. On the supply side, it is possible that private hospitals charge OOPP because they know demand for dialysis care is relatively inelastic within their patient pool or because BSBY reimbursements that are too low to cover their costs. We cannot disentangle these explanations and find evidence supportive of both. First, Panel B of Table 4 shows that only 29% of treated private patients report ever bargaining. Second, conditional on attempting to bargain, 76% of respondents failed to obtain a lower price, which suggests that private hospitals do not have financial incentives to retain BSBY patients by lowering OOPP.

We had also pre-specified that we would look at heterogeneity by whether a primary hospital had any or no neighbor hospitals within 10km, since only the intervention for patients at primary hospitals with neighbors included the names of these neighbors. Our hypothesis was that exit would be greater in the group with neighbors, where outside options are relatively close by. However, because there are very few hospitals with no neighbors (18 out 91), our estimates are much noisier for this sample, as shown in Figure A.4. We cannot reject equality of the effects on awareness or OOPP across the groups with and without neighbors, but we only observe increases in the exit strategy index among patients at hospitals with neighbors, as expected. We had also specified that we would examine heterogeneity by gender, given that women face systematic biases and may be less able to negotiate with hospitals or switch, but Figure A.5 shows no differences.

4.2 Longer Term Impacts

The administrative claims data can be used to look at impacts on care-seeking patterns in the longer run. We present the results in Table 5. The unit of observation is a patient-day. We focus on the 4-month period from July 1 to October 31, 2018, and compare the behavior of the "pure control group" to the behavior of all those sampled for the information intervention in April-May 2018.

We look at whether patients drop out, where they are no longer observed in the claims data, and whether they visit new BSBY hospitals that are different from their pre-intervention primary hospital. Effects on "dropout" are difficult to interpret because they may reflect changes in death (which may increase or decrease, depending on how the quality of care changes) as well as exit from BSBY to non-BSBY hospitals. Nevertheless, we present it as an outcome, as it informs *selection* into the longer-term data. We find no significant impacts on dropout, suggesting the composition of those remaining in BSBY does not change and simplifies interpretation of the remaining results. Interestingly, we find that the "exit" strategy observed in the short-run for patients in the private sector persists over the longer term. Treated patients that had a private primary hospital at the start of the study are more likely to visit a hospital they have never visited before (column 2), that is different from their primary hospital (column 3). However, the modest shift into public hospitals observed in the short run does not persist in the long run (column 4).

4.3 Potential Spillovers

Given that we randomized treatment status within hospital to increase power, there are two types of spillovers to think about. The first is an information spillover to control patients in the same hospital, if patients discuss prices with each other. The second is a displacement effect, if hospitals increase costs for (or withhold more services from) uninformed patients once charging (or withholding services from) informed patients becomes more difficult.

The presence of information spillovers would cause us to underestimate the treatment effect and could explain the null effect on OOPP in the private sector. Results shown in Table A.9 suggest that patients do discuss their care with each other. Slightly over 67% of patients know another patient at their dialysis hospital, and this is similar across treatment and control. About 14% of patients in the control group report discussing dialysis prices, and 23% report discussing BSBY with other patients. These measures increase significantly, by 30pp (22pp) and 21pp (21pp) among private (public) patients that received the information treatment. Because the increases among treatment patients are estimated off the difference between treatment and control, they necessarily reflect conversations *between treatment patients among themselves*, and not with control patients, but discussions reported by patients in the control group could reflect some

informational spillovers in addition to baseline levels of conversation. However, as shown above, we observe large effects on BSBY awareness, as well as effects on exit and bargaining, indicating that we have a strong "first stage", so the lack of effect on OOPP among private sector patients cannot be explained through information spillovers alone.

The second type of spillover, displacement, could be one mechanism behind the reductions in OOPP for tests and medicines observed for patients in the public sector. If stocks at public facilities are limited, the total number of patients who receive the tests and medicines at the hospital may have remained unchanged, with those informed more likely to obtain them than those uninformed. Our data do not allow us to study this, but if this is a mechanism, the effects of a scaled up intervention would depend on whether hospital staff would put forth the effort to avoid stockouts and procure additional supplies if *all* patients were informed and claiming for what they are entitled.

5 Conclusion

Public health insurance programs are being rapidly scaled up across India and other low- and middle-income countries. However, without appropriately designed incentives, including adequate monitoring and accountability systems, these programs may not achieve their goals and benefit the target population. Our study finds high OOPP in both public and private hospitals in a large public health insurance program that officially entitles patients to free care. Providing patients information about their entitlements and health facilities available to them is a low-cost and scalable intervention with the potential to improve 'bottom-up' accountability.

We experimentally test a phone-based information intervention among dialysis patients under health insurance. The intervention improved beneficiary awareness of their entitlements, demonstrating that simple phone-based information provision can be an effective method for disseminating information in the healthcare context. But information is not power: although patients acted on the information (some tried negotiating to lower prices while others chose to try out a different hospital), this did not lead to significant reductions in patient financial outlays overall.

We find substantial heterogeneity by hospital sector. Patients visiting public hospitals (a small minority of patients) experience a large and significant reduction in OOPP. This comes about through increased patient voice (bargaining). Patients with a private primary hospital at sampling were significantly more likely to switch to a different hospital in response to the intervention (exit strategy), but did not necessarily switch into one of the hospitals named in the information intervention, suggesting the information encouraged patients to search more broadly for a hospital that meets their needs. However, this did not result in lower OOPP on average. This is possibly because 1) most patients neither switched nor bargained, and 2) those who switched to other private hospitals saw an OOPP increase that offset the OOPP decreases for those switching to public hospitals. The intervention did not improve objective or subjective measures of care quality for either group of patients.

While our study focuses on dialysis care, our findings that remedying information gaps is important but not sufficient may generalize to other tertiary care services better than the accountability literature, which has largely focused on primary care so far. Indeed, tertiary care is typically delivered in specialized facilities where the hospital holds substantial power and patient-driven accountability may have limited potential. Since dialysis care can be planned in advance and requires repeated visits with numerous opportunities for shopping and negotiation, one would have expected the effects of information to be larger in this context than for emergency tertiary care—therefore, the finding that information was not enough to change OOPP for the majority of patients in this context suggests that patient-driven accountability may not substitute for improved top-down monitoring and appropriate incentive-setting for hospitals.

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Table 1: Summary Statistics

	Total		Private		Public		Priv=Pub
	Mean	SD	Mean	SD	Mean	SD	P-value
Panel A: Hospital Characteristics at Sampling							
Months in BSBY	22.09	6.61	20.61	6.87	27.02	0.34	0.00
Average monthly BSBY patients	220.31	273.59	152.58	203.90	446.07	351.87	0.00
Total BSBY dialysis patients in the study	12.35	12.94	11.09	10.30	16.57	19.06	0.22
Has $\geq$ 1 neighbor hospital	0.80	0.40	0.83	0.38	0.71	0.46	0.31
# of neighbor hospitals	1.90	1.22	2.01	1.19	1.52	1.29	0.13
Any public hospital among neighbor hospitals	0.60	0.49	0.69	0.47	0.27	0.46	0.00
Observations	91		70		21		91
Percent	100%		76.9%		23.1%		100%
Panel B: Patient Characteristics at Sampling							
Weeks on dialysis under BSBY	25.54	22.70	25.58	22.81	25.45	22.48	0.93
# of BSBY hospitals visited for dialysis	1.43	0.75	1.47	0.78	1.36	0.68	0.02
Visited > 1 hospital	0.32	0.46	0.34	0.47	0.27	0.44	0.02
Observations	1113		774		339		1113
Percent	100%		69.5%		30.5%		100%
Panel C: Patient Characteristics at Pre-Survey							
Female patient	0.32	0.47	0.34	0.48	0.27	0.45	0.06
Patient age (years)	43.90	14.37	44.50	14.43	42.45	14.13	0.07
Years of schooling	6.40	4.84	6.35	4.95	6.52	4.58	0.66
Scheduled caste/tribe	0.20	0.40	0.18	0.39	0.25	0.44	0.05
Asset index	0.01	1.00	0.06	1.02	-0.12	0.96	0.03
Care Seeking and Quality							
Visited > 1 hospital in last 4 weeks	0.07	0.25	0.07	0.25	0.06	0.24	0.60
Visited $\geq$ 1 private hospital in last 4 weeks	0.70	0.46	0.94	0.23	0.12	0.32	0.00
Visits in last 4 weeks	7.99	2.63	8.31	2.68	7.20	2.33	0.00
Ever bargained with hospital	0.17	0.37	0.21	0.41	0.06	0.24	0.00
Ever got dialysis elsewhere	0.54	0.50	0.56	0.50	0.49	0.50	0.07
Chose current primary hospital because:							
...Is nearby	0.36	0.48	0.37	0.48	0.34	0.48	0.43
...Price is good	0.13	0.34	0.11	0.31	0.20	0.40	0.00
...Quality is good	0.38	0.48	0.41	0.49	0.29	0.46	0.00
...Takes BSBY	0.17	0.37	0.15	0.36	0.21	0.41	0.07
Primary hospital technical quality (std index)	-0.02	1.03	0.09	0.96	-0.32	1.15	0.00
Primary hospital perceived quality (std index)	0.11	1.01	0.17	0.99	-0.04	1.02	0.01
Panel D: BSBY Awareness and OOPP							
Has heard of BSBY	0.91	0.28	0.93	0.25	0.87	0.34	0.02
Knows BSBY covers all costs	0.54	0.50	0.52	0.50	0.60	0.49	0.13
Knows BSBY balance amount deducted per visit	0.22	0.42	0.24	0.43	0.18	0.39	0.08
Payments in Last 4 Weeks							
Any OOPP at hospital	0.41	0.49	0.51	0.50	0.18	0.39	0.00
OOPP amount at hospital	1733.26	3831.10	2056.53	3944.53	967.95	3437.31	0.00
Got test/meds outside hospital	0.45	0.50	0.41	0.49	0.53	0.50	0.00
Any OOPP for test/meds outside hospital	0.41	0.49	0.37	0.48	0.50	0.50	0.00
...Because unavailable at hospital	0.45	0.50	0.37	0.48	0.60	0.49	0.00
...Because cheaper elsewhere	0.17	0.38	0.24	0.43	0.05	0.21	0.00
OOPP amount outside hospital	1365.52	2472.59	1362.11	2572.24	1373.55	2226.16	0.95
Any OOPP overall	0.66	0.47	0.70	0.46	0.57	0.50	0.00
Total OOPP	3023.84	4424.90	3339.04	4527.44	2277.62	4086.13	0.00
Observations	750		531		219		750
Percent	100%		70.8%		29.2%		100%

Notes: **Panel A** presents statistics on all public and private hospitals in the study - i.e. BSBY hospitals that filed dialysis claims during the sampling period (1-Feb-2018 to 21-Mar-2018) and were the primary dialysis hospital for any patients enrolled in the study. Hospital characteristics are drawn from BSBY claims data. Monthly BSBY patients is the average number of BSBY patients visiting the hospital *for any type of care* over the 3 months prior to the study (January to March 2018). Total BSBY dialysis patients is the number of BSBY patients *who received dialysis* during the sampling period at this hospital. "Neighbor hospitals" are other BSBY dialysis hospital within a 10-kilometer radius. "Any public hospital among neighbor hospitals" is conditional on having at least one neighbor hospital. **Panel B** presents statistics on all patients sampled for the study using claims data filed between 1/1/2017 and 3/21/2018. Patients are split by whether their primary dialysis hospital prior to the study was private or public. **Panel C** presents statistics on patients who completed a survey from pre-intervention and pure control surveys (i.e. each patient's first survey). In Panel C the primary hospital is the hospital most visited for dialysis in the 4 weeks prior to the survey (rather than prior to the study in Panel B). The assets, technical quality, and perceived quality indices are the first component of a principal component analysis of indicators, expressed in standard deviation terms. The technical quality index includes dummies for no infection and no bleeding, no more than half hour wait time at the hospital, dialysis session lasted for 3+ hours (typically the minimum sufficient duration), and respondent was attended to by medical staff. The perceived quality index includes dummies for whether the respondent reported very respectful staff, very clean facility, being very satisfied with care and cost, and that she would recommend the facility to others. In **Panel D**, Out-of-Pocket Payments (OOPP) are for the 4 weeks prior to the survey. OOPP amount at hospital includes payments made directly at the dialysis hospital and Total OOPP amounts includes payments at the hospital(s) as well as for dialysis-related tests or medicines obtained outside the hospital(s). Monetary amounts are expressed in Indian Rupees (INR) and winsorized at the 1% level.

Table 2: Average Effects on Awareness, Behavior, and Out-of-Pocket Payments

	(1)	(2)	(3)	(4)	(5)	(6)
				In the last 4 weeks,		
	BSBY Awareness Index	Exit: Hospital Selection Index	Voice: Ever Bargained with Hospital	Any OOPP overall	Total OOPP overall	OOPP amount at last hospital visit
Panel A: All						
Post Treatment	0.171***	0.126**	0.072**	-0.006	-98.099	-10.253
	(0.042)	(0.043)	(0.023)	(0.025)	(227.623)	(33.242)
	{0.000}	{0.004}	{0.002}	{0.794}	{0.667}	{0.758}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,271	1,280	1,266	1,232	1,232	1,232
R-squared	0.129	0.143	0.137	0.201	0.178	0.135
Control Mean	-0.006	-0.000	0.168	0.662	3,023.840	233.621
Panel B: Heterogeneity						
Post Treatment x Private	0.173***	0.171***	0.079**	0.022	200.036	5.709
	(0.050)	(0.047)	(0.029)	(0.028)	(284.547)	(42.731)
	{0.001}	{0.000}	{0.007}	{0.440}	{0.482}	{0.894}
Post Treatment x Public	0.167**	0.020	0.054*	-0.073	-799.850**	-48.483
	(0.074)	(0.096)	(0.032)	(0.050)	(361.029)	(45.238)
	{0.025}	{0.833}	{0.086}	{0.146}	{0.027}	{0.284}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,271	1,280	1,266	1,232	1,232	1,232
R-squared	0.129	0.145	0.137	0.203	0.180	0.135
Control Mean Pvt	0.018	-0.035	0.213	0.699	3,339.041	277.712
Control Mean Pub	-0.063	0.085	0.060	0.572	2,277.619	128.052
P-value Effect Pvt=Pub	0.943	0.165	0.564	0.101	0.030	0.378

Notes: See Table A.4 for the components of the BSBY Awareness Index and Table A.5 for the components of the "Exit: Hospital Selection Index". "OOPP amount outside hospital" reflect payments for dialysis-related tests or medicines obtained outside the hospital in the last 4 weeks. Total OOPP amount reflects payments at the hospital as well as outside the hospital. Out-of-Pocket Payments (OOPP) are expressed in Indian Rupees (INR) and winsorized at the 1% level. Public and Private are dummies indicating the sector of the respondent's primary dialysis hospital at sampling. All regressions include randomization strata fixed effects, as well as controls for gender, age group dummies, weeks on dialysis under BSBY at sampling, average dialysis visits per week during the sampling period, whether the patient's primary dialysis hospital at sampling is private, dummies for whether the survey was done on the first or last week of the month, and a dummy for whether the survey respondent is the patient herself. Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.

Table 3: Mechanisms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	In the last 4 weeks,						
	# dialysis visits	Got test/meds outside hospital	OOPP amount outside hospital	Got tests/meds at hospital	OOPP amount at hospital	Total OOPP for BSBY care	Primary hospital is an intervention hospital
Post Treatment x Private	0.008	-0.016	17.646	-0.036	152.920	101.527	0.003
	(0.130)	(0.032)	(157.970)	(0.030)	(254.329)	(250.007)	(0.009)
	{0.953}	{0.623}	{0.911}	{0.238}	{0.548}	{0.685}	{0.739}
Post Treatment x Public	0.057	-0.132**	-482.493**	0.022	-370.870	-512.126*	0.060
	(0.169)	(0.053)	(202.157)	(0.043)	(322.831)	(278.116)	(0.038)
	{0.736}	{0.013}	{0.017}	{0.616}	{0.251}	{0.066}	{0.117}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,226	1,201	1,180	1,251	1,232	1,227	925
R-squared	0.345	0.138	0.117	0.264	0.170	0.195	0.123
Control Mean Pvt	8.311	0.412	1,362.112	0.352	2,056.527	3,107.286	0.015
Control Mean Pub	7.203	0.529	1,373.551	0.662	967.953	1,823.200	0.037
P-value Effect Pvt=Pub	0.817	0.064	0.052	0.279	0.201	0.101	0.150

Note: All Out-of-Pocket Payments (OOPP) are dialysis-related payments, reported in Indian Rupees (INR) and winsorized at the 1% level. For OOPP at hospital, we asked for the total payments in the last 4 weeks as well as the breakdown of costs between payments for tests, medicines, and dialysis itself, as well as payments directly to the medicial staff or for any other expenditures related to dialysis care (see breakdown in Table A.6). See Table 2 for details about the specifications. "Primary hospital is an intervention hospital" is defined only for respondents whose primary hospital at sampling had at least one neighbor hospital. It is a dummy equal to 1 if the respondent's primary hospital at the time of the survey is one of the BSBY dialysis hospitals mentioned during the information treatment (see details about the information intervention in subsection 3.2). Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.

Table 4: Additional Summary Statistics

	Total		Private		Public		Priv=Pub
	Mean	SD	Mean	SD	Mean	SD	P-value
Panel A: Full Sample Pre-Survey							
Chose current primary hospital because:							
...Is nearby	0.36	0.48	0.37	0.48	0.34	0.48	0.43
...Price is good	0.13	0.34	0.11	0.31	0.20	0.40	0.00
...Quality is good	0.38	0.48	0.41	0.49	0.29	0.46	0.00
...Takes BSBY	0.17	0.37	0.15	0.36	0.21	0.41	0.07
Primary hospital technical quality (std index)	-0.02	1.03	0.09	0.96	-0.32	1.15	0.00
Primary hospital perceived quality (std index)	0.11	1.01	0.17	0.99	-0.04	1.02	0.01
Price, Quality, and Sector Trade-offs							
Would go to public over private (same price)	0.38	0.49	0.26	0.44	0.66	0.48	0.00
Would go to public over private (pub Rs2000 cheaper)	0.65	0.48	0.56	0.50	0.85	0.36	0.00
Between two private hospitals:							
...Would go to cheaper hospital (Rs500 diff)	0.72	0.45	0.67	0.47	0.83	0.38	0.02
...Would go to cheaper hospital (Rs2000 diff)	0.76	0.43	0.71	0.46	0.87	0.34	0.01
...Cheaper hospital is better quality (Rs500 diff)	0.41	0.49	0.37	0.49	0.49	0.50	0.17
...Cheaper hospital is better quality (Rs2000 diff)	0.44	0.50	0.37	0.48	0.57	0.50	0.01
Observations	734		518		216		734
Panel B: Treatment Sample Post-Survey							
Ever bargained	0.24	0.43	0.29	0.46	0.11	0.32	0.00
Bargained in last 4wks	0.19	0.39	0.23	0.42	0.10	0.30	0.00
When tried to bargain:							
Bargaining led to no change	0.77	0.42	0.76	0.43	0.84	0.37	0.38
Bargaining reduced price	0.17	0.37	0.19	0.39	0.05	0.23	0.04
Bargaining led to service refusal	0.05	0.21	0.05	0.21	0.05	0.23	0.92
Patient Did Not Bargain Because:							
...Care was free	0.69	0.46	0.64	0.48	0.78	0.42	0.00
...Satisfied with current price	0.11	0.31	0.16	0.36	0.03	0.18	0.00
...Satisfied with current quality	0.13	0.34	0.13	0.34	0.12	0.33	0.77
...Other hospitals are more expensive	0.18	0.38	0.20	0.40	0.13	0.34	0.05
...Other hospitals are worse quality	0.04	0.21	0.05	0.21	0.04	0.20	0.78
...No other hospitals nearby	0.06	0.24	0.08	0.27	0.03	0.16	0.01
...It would have no effect	0.05	0.21	0.07	0.25	0.01	0.12	0.00
...Fears hospital retaliation	0.00	0.05	0.00	0.06	0.00	0.00	0.32
Observations	530		364		166		530

Note: Panel A shows summary statistics from the pre-intervention surveys compiled across the study timeline. "Private" include respondents whose primary hospital for dialysis-related services during the sampling period was private and "Public" includes those whose primary hospital was public. The current primary hospital is the hospital the respondent reports visiting the most often for dialysis in the 4 weeks prior to the survey. See Table 1 notes for definitions of the technical quality and perceived quality indices. In the "Price, Quality, and Sector Trade-offs" panel, respondents were asked which of two hospitals they would visit and which they thought would be higher quality when one charged INR2,000 and the other charged INR0, 500, 1000, 1500, or 2000. The two hospitals were either both private or the one with varying price was public and the other private. Panel B shows summary statistics from the post-intervention surveys administered to those who had previously received the treatment.

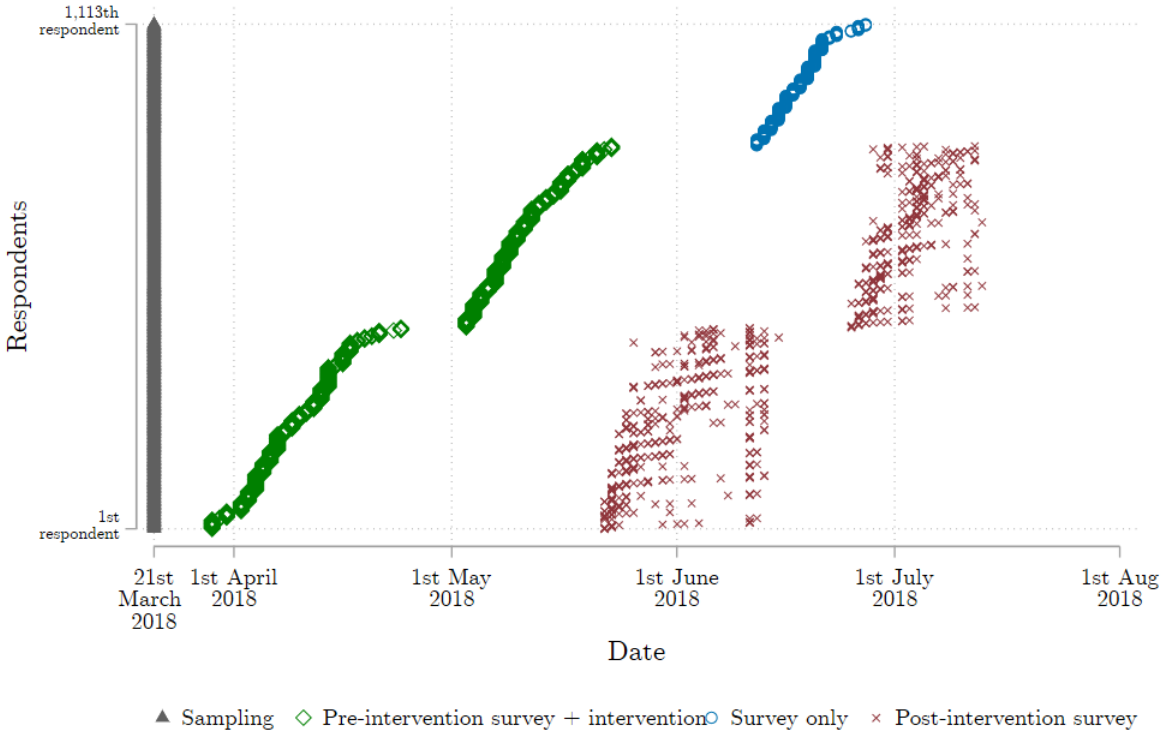
Table 5: Long-Term Outcomes

	(1) Dropped out	(2) Visited New BSBY hospital	(3) BSBY visit outside primary hospital	(4) BSBY visit outside primary sector
Panel A: Pooled Effect				
Post Treatment	0.017	0.006	0.003	-0.006*
	(0.029)	(0.005)	(0.005)	(0.003)
	{0.557}	{0.177}	{0.543}	{0.068}
Stratum FE	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations (ID-day)	135,811	135,811	135,811	135,811
Unique IDs	1,113	1,113	1,113	1,113
Control Mean	0.38	0.02	0.03	0.02
Panel B: Heterogeneity Effect				
Post Treatment * Private	-0.002	0.013**	0.009*	-0.003
	(0.031)	(0.005)	(0.005)	(0.003)
	{0.958}	{0.007}	{0.097}	{0.221}
Post Treatment * Public	0.085	-0.017	-0.018	-0.017
	(0.068)	(0.014)	(0.014)	(0.013)
	{0.210}	{0.224}	{0.195}	{0.166}
Stratum FE	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations (ID-day)	135,811	135,811	135,811	135,811
Unique IDs	1,113	1,113	1,113	1,113
Control Mean	0.38	0.02	0.03	0.02

Note: Outcomes are from the administrative claims data. The unit of observation is a patient-day. We focus on the period July 1 to October 31, 2018, and compare the behavior of the "pure control group" to the behavior of all those sampled for the information intervention in April-May 2018. Public and Private are dummies indicating the sector of the hospital the respondent visited most for dialysis during the sampling period. "Dropped out" is a dummy equal to 1 if the date is beyond the patient's last recorded visit to a BSBY hospital in the claims data. "Visited a new BSBY hospital" is a dummy equal to 1 if a dialysis claim was filed by a hospital which did not file any dialysis claim for the respondent during the sampling period. Controls include gender, age (group dummies), weeks on dialysis under BSBY at sampling, average dialysis visits per week during the sampling period, whether the patient only visited private hospitals during the sampling period. Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.

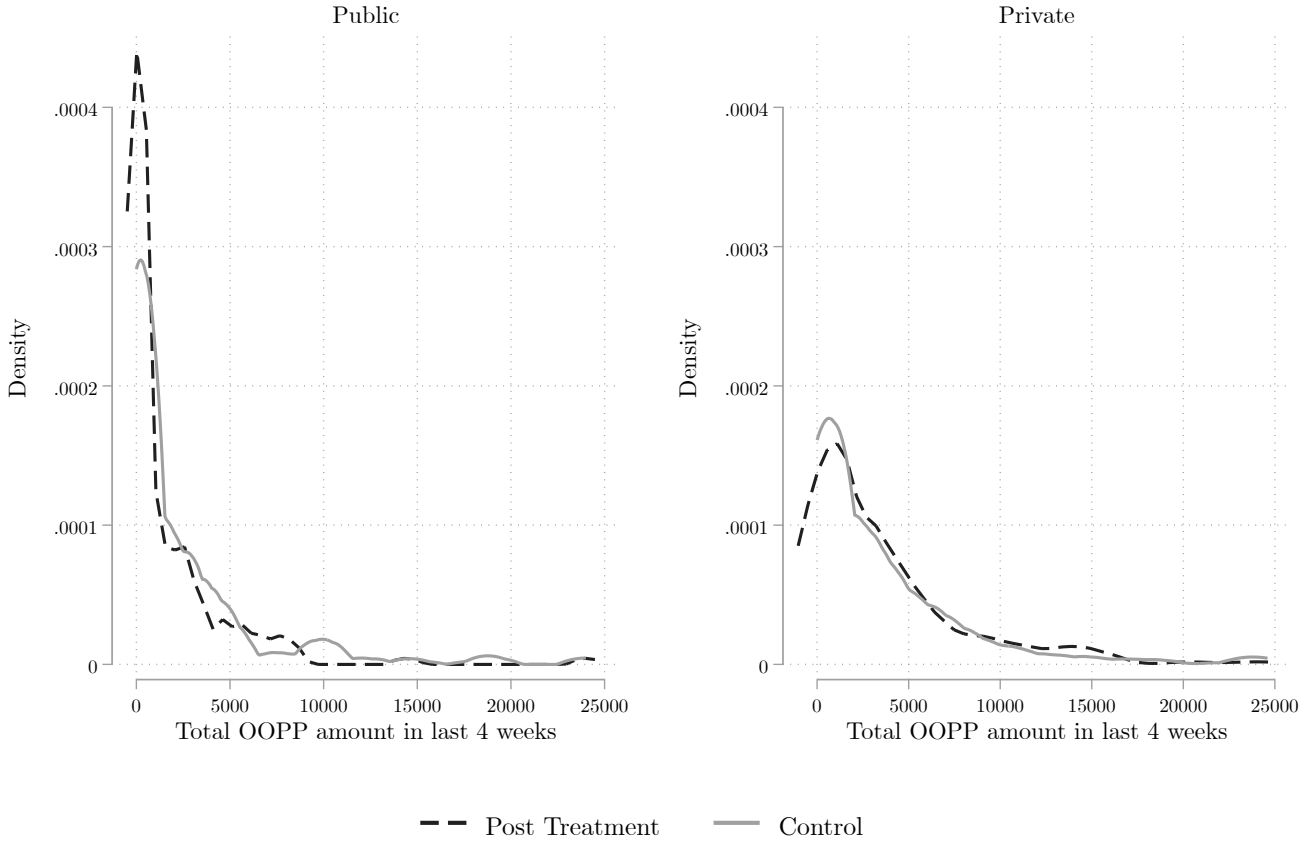
Appendix

Figure A.1: Timeline and Study Design



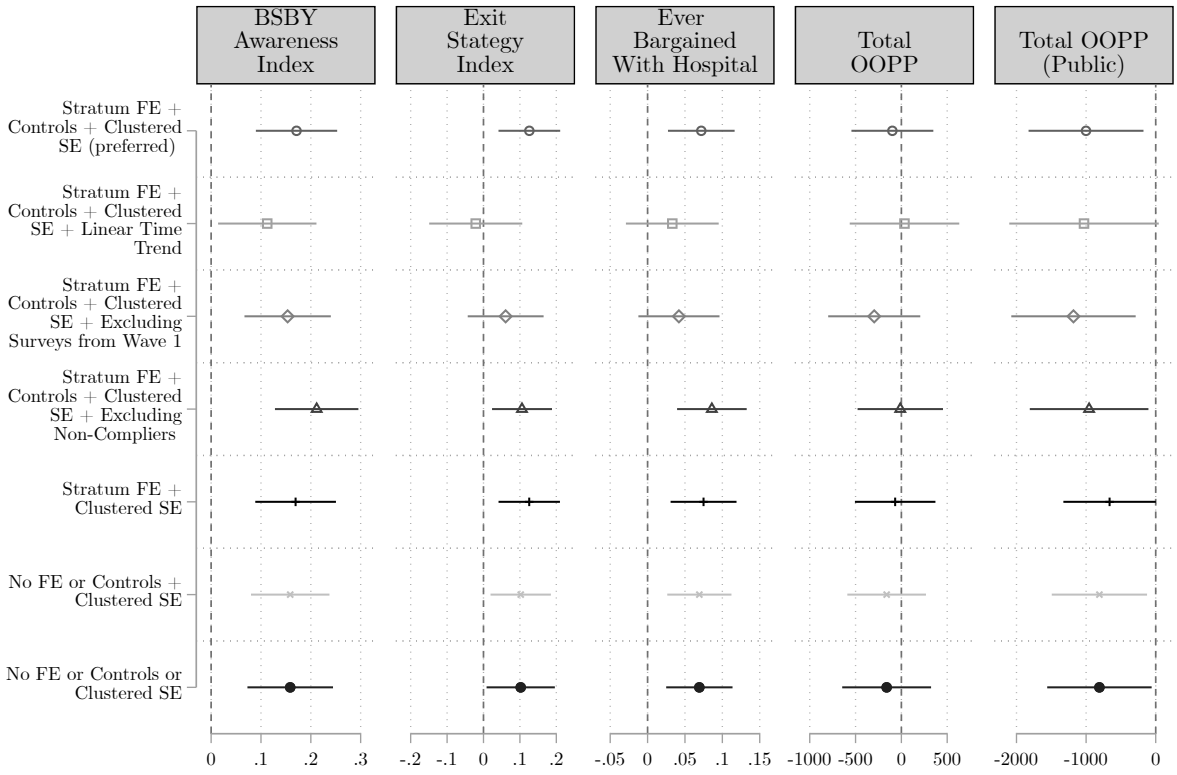
Note: This graph shows the dates at which each respondent was sampled and last attempted to be surveyed for the pre- and post-intervention surveys (whether the attempt was successful or not). The study sample includes all patients with a dialysis claim under BSBY between 1-Feb-2018 to 21-Mar-2018 (sampling period) and a recorded phone number (N=1,113). All patients were called for a pre-intervention survey; the first 76% (N=845) of patients were sampled to receive the information treatment at the end of the pre-intervention survey; the remaining 24% received no information and were kept as "pure control" for long-term follow-up using administrative claims data (see details in subsection 3.2). Patients were ordered randomly for the pre-intervention survey and intervention so that the date they were treated is orthogonal to patient characteristics. Treated patients were called for a post-intervention survey about 8 weeks later.

Figure A.2: Distribution of Total Out-of-Pocket Payments



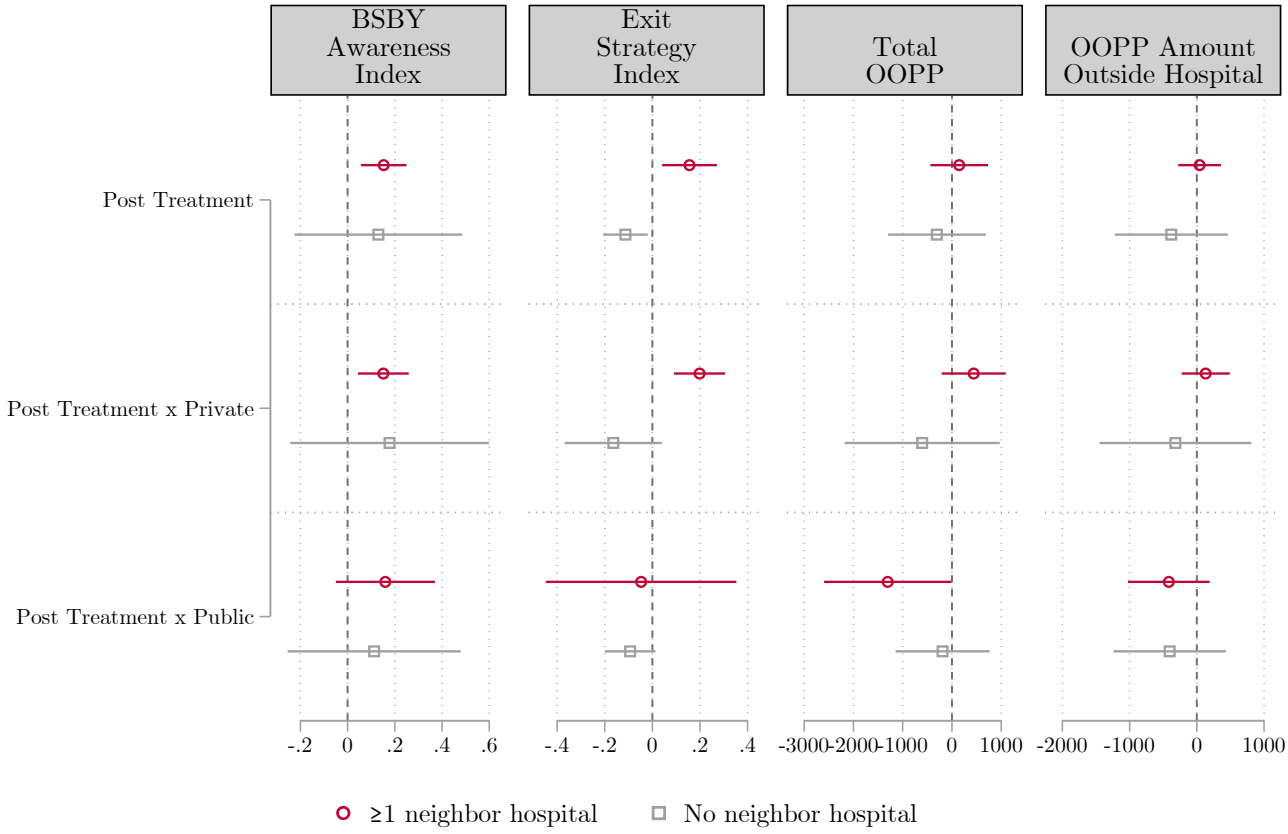
Note: The graph plots the full distribution of total out-of-pocket payments (OOPP) in the treatment and control groups separately by sector. "Private" includes respondent whose most visited hospital for dialysis-related services during the sampling period was private, and "Public" includes respondents whose primary hospital was public. Total OOPP include payments at the hospital for dialysis as well as for dialysis-related tests or medicines obtained outside the hospital in the last 4 weeks, expressed in Indian Rupees (INR) and winsorized at the 1% level.

Figure A.3: Treatment Effect Estimates for Key Outcomes from Different Specifications



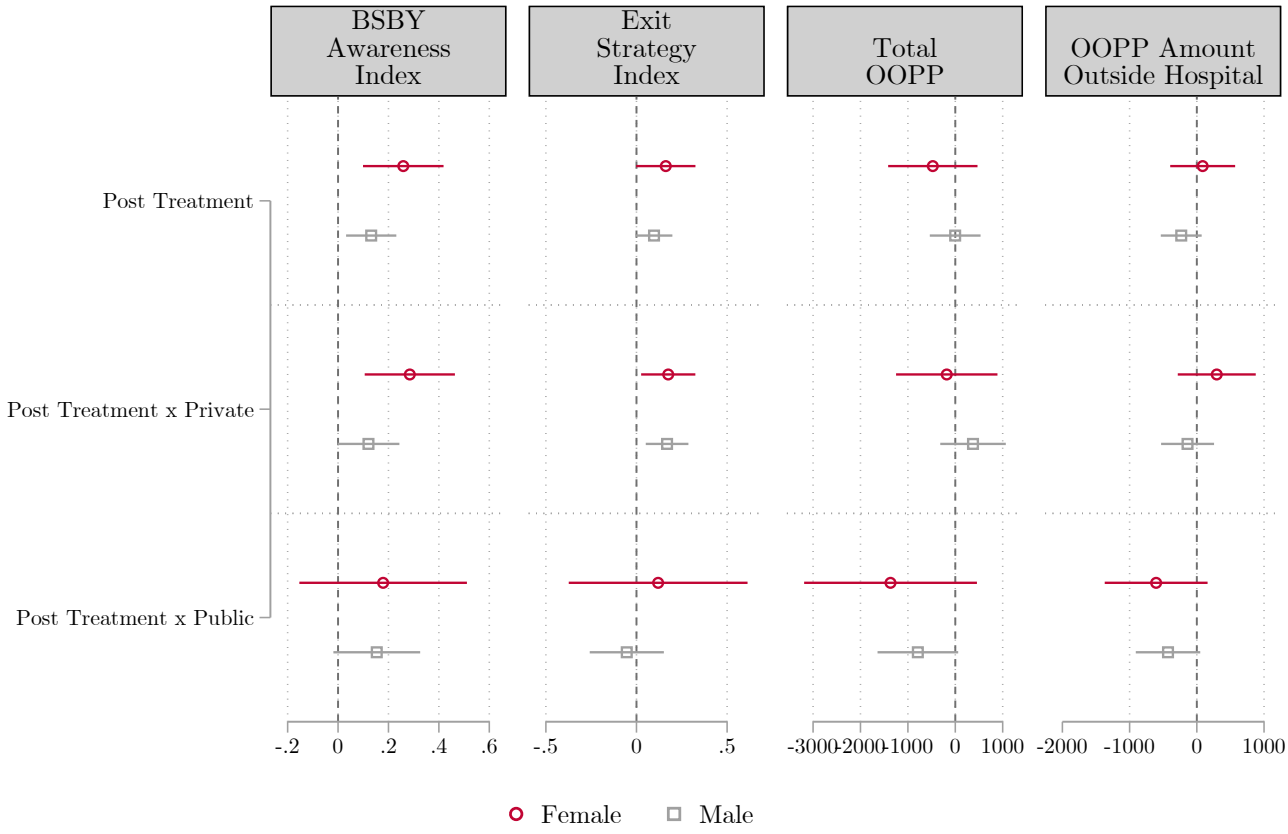
Note: To test the robustness of our results on key outcomes to different specifications, the figure plots the "Treatment" coefficients and 95% confidence intervals, from a series of regressions of each outcome at the top on a treatment dummy and the fixed effects, controls and clustering indicated on the y-axis. The first specification is the one used to estimate treatment effects in Table 2. In the second row, we control linearly for the survey date. In the third row, we exclude pre-intervention survey answers collected in the first "wave" of data collection, from 29-Mar-2018 to 24-Apr-2018. In the fourth row, we exclude patients who were not reached for the pre-intervention survey, hence did not receive the treatment, but were reached for the post-intervention survey (N=57). All robust standard errors are clustered at the patient level except for the last row of coefficients. In column 5, we report the "Treatment" coefficient from the sample of patients whose sampling primary hospital for dialysis was public (as observed in the claims data). Monetary amounts are expressed in Indian Rupees (INR) and winsorized at the 1% level.

Figure A.4: Treatment Heterogeneity by Hospital Density



Note: The figure plots coefficients and 95% confidence intervals from a series of regressions for which each outcome at the top is regressed on "Post Treatment" (as in Panel A of Table 2) or "Post Treatment x Public" and "Post Treatment x Private" dummies (as in Panel B of Table 2), by whether the patient's primary hospital at sampling had at least 1 neighboring hospital within 10km. See Table 2 notes for details on the controls included and specifications as well as outcome definitions.

Figure A.5: Treatment Heterogeneity by Patient Gender



Note: The figure plots coefficients and 95% confidence intervals from a series of regressions for which each outcome in the top boxes is regressed on "Post Treatment" (as in Panel A of Table 2) or "Post Treatment x Public" and "Post Treatment x Private" dummies (as in Panel B of Table 2), by gender of the patient. See Table 2 notes for details on the controls included and specifications as well as outcome definitions.

Table A.1: Balance

	Post-Treatment		Control		P-value on
	Mean	SD	Mean	SD	Treatment
Panel A: Full Sample					
Female patient	0.31	0.46	0.31	0.46	0.882
Patient age (years)	45.21	14.78	45.07	14.90	0.395
Patient weeks on dialysis under BSBY	26.35	22.90	25.54	22.70	0.166
Patient average dialysis visits per week	1.67	0.49	1.66	0.49	0.436
Patient's sampling primary hospital characteristics:					
Hospital months in BSBY	22.90	5.96	22.78	6.00	0.236
Hospital total BSBY dialysis patients in the study	25.13	17.46	25.46	17.29	0.256
Observations	845		1,113		1,958
F-test for joint significance of coefficients					.667
Panel B: Among Those Reached					
Female patient	0.32	0.46	0.32	0.47	0.787
Patient age (years)	43.98	14.11	43.90	14.37	0.692
Patient weeks on dialysis under BSBY	28.07	23.13	27.47	23.01	0.542
Patient average dialysis visits per week	1.69	0.46	1.68	0.47	0.617
Patient's sampling primary hospital characteristics:					
Hospital months in BSBY	22.54	6.12	22.35	6.16	0.300
Hospital total BSBY dialysis patients in the study	23.65	16.19	23.45	15.96	0.659
Observations	530		750		1,280
F-test for joint significance of coefficients					.228
Panel C: Among Those Reached (Private only)					
Female patient	0.34	0.47	0.34	0.48	0.981
Patient age (years)	44.29	14.07	44.50	14.43	0.785
Patient weeks on dialysis under BSBY	27.30	23.00	26.86	22.84	0.246
Patient average dialysis visits per week	1.75	0.48	1.74	0.48	0.779
Patient's sampling primary hospital characteristics:					
Hospital months in BSBY	20.52	6.43	20.45	6.40	0.753
Hospital total BSBY dialysis patients in the study	17.47	9.47	17.94	9.63	0.187
Observations	364		531		895
F-test for joint significance of coefficients					.698
Panel D: Among Those Reached (Public only)					
Female patient	0.26	0.44	0.27	0.45	0.712
Patient age (years)	43.32	14.24	42.45	14.13	0.196
Patient weeks on dialysis under BSBY	29.76	23.38	28.92	23.40	0.422
Patient average dialysis visits per week	1.55	0.38	1.54	0.39	0.560
Patient's sampling primary hospital characteristics:					
Hospital months in BSBY	26.98	0.37	26.98	0.38	0.884
Hospital total BSBY dialysis patients in the study	37.20	19.33	36.80	19.91	0.694
Observations	166		219		385
F-test for joint significance of coefficients					.385

Note: The table presents characteristics the treatment and control groups using administrative claims data prior to 21-Mar-2018, and tests for differences in means to check balance. **Panel** A includes all patients in the study sample: because the pre-intervention surveys for all patients are pooled to form the control group, the entire sample of patients is included in the control group (N=1113); the subset of patients that were randomly assigned to receive the intervention after their pre-intervention survey are included again in the treatment group (N=845). **Panel B** only includes respondents who completed the survey, **Panel C** zooms in on those whose primary dialysis hospital during the sampling period (1-Feb-2018 to 21-Mar-2018) was private, and **Panel D** on those whose primary dialysis hospital was public. The patient's sampling primary hospital is the BSBY hospital she visited most often for dialysis during the sampling period. "Patient weeks on dialysis under BSBY" is measured since January 2017. "Hospital total BSBY dialysis patients" is the number of study patients for whom this was a primary hospital at sampling. Column 5 presents the p-value on treatment from regressions of each characteristic on a treatment dummy with robust standard errors clustered at the individual level. Randomization strata (hospital) fixed effects are included for patient variables. The F-test for joint significance of coefficients comes from regressing the treatment dummy on all the sampling characteristics shown in the panel, with randomization strata fixed effects, and robust standard errors clustered at the individual level.

Table A.2: Pre-intervention Survey and Information Treatment Delivery Status

	Total		**Private**		**Public**		**Priv=Pub**
	Mean	SD	Mean	SD	Mean	SD	P-value
Wrong/invalid number	0.18	0.38	0.20	0.40	0.13	0.34	0.00
Refused survey	0.01	0.12	0.02	0.13	0.01	0.08	0.08
Patient dead at time of call	0.12	0.33	0.09	0.28	0.21	0.41	0.00
Household reached and surveyed	0.68	0.47	0.70	0.46	0.65	0.48	0.19
Patient herself surveyed	0.34	0.47	0.35	0.48	0.32	0.47	0.24
Sampled for treatment	0.76	0.43	0.73	0.45	0.83	0.37	0.00
Observations	1113		774		339		1113
If sampled for treatment							
Received treatment information	0.74	0.44	0.77	0.42	0.70	0.46	0.04
Information delivered to patient directly	0.36	0.48	0.37	0.48	0.34	0.47	0.46
Observations	845		563		282		845

Note: This table shows the pre-intervention survey status for all sampled respondents. Confirmed deaths may be an underestimate of true deaths because when people die their number may be deactivated and unreachable, in which case they may be classified as wrong/invalid number. "Private" includes respondent whose most visited hospital during the sampling period (1-Feb-2018 to 21-Mar-2018) was private, and "Public" includes respondents whose primary hospital was public. We oversampled patients whose primary hospital was public to receive the intervention, since there are fewer of them, to make sure we were powered to detect effects by hospital sector (see subsection 3.3).

Table A.3: Attrition

	(1) Household reached for survey	(2) Patient herself surveyed
Panel A: All		
Post Treatment	-0.010	0.015
	(0.027)	(0.026)
	{0.706}	{0.555}
Stratum FE	Yes	Yes
Controls	Yes	Yes
Observations	1,958	1,958
R-squared	0.189	0.230
Control Mean	0.67	0.34
Panel B: Heterogeneity		
Post Treatment x Private	-0.003	0.015
	(0.029)	(0.028)
	{0.915}	{0.611}
Post Treatment x Public	-0.026	0.017
	(0.040)	(0.039)
	{0.513}	{0.670}
Stratum FE	Yes	Yes
Controls	Yes	Yes
Observations	1,958	1,958
R-squared	0.189	0.230
Control Mean Private	0.69	0.35
Control Mean Public	0.65	0.32

Note: Sample pools pre- and post-intervention surveys (so treated households are included twice in the sample, there are 1,113 individual households in the sample with 845 appearing twice). Regressions include controls for gender, age (group dummies), weeks on dialysis under BSBY at sampling since January 1st, 2017, average dialysis visits per week at sampling, whether the patient only visited private hospitals during the sampling period, and the number of weeks between sampling and the latest survey attempt. Robust standard errors in parentheses, p-values in curly brackets.

Table A.4: BSBY Awareness

	(1) Knows BSBY balance amount deducted per visit	(2) Knows BSBY covers all costs	(3) Knows BSBY covers dialysis costs	(4) Knows BSBY covers medicines	(5) Knows BSBY covers tests	(6) BSBY Awareness Index
Post Treatment x Private	0.110***	0.059	0.097**	0.062*	0.026	0.173***
	(0.029)	(0.038)	(0.036)	(0.033)	(0.037)	(0.050)
	{0.000}	{0.117}	{0.007}	{0.062}	{0.479}	{0.001}
Post Treatment x Public	0.050	0.022	0.022	0.096*	0.054	0.167**
	(0.038)	(0.062)	(0.055)	(0.054)	(0.058)	(0.074)
	{0.188}	{0.723}	{0.690}	{0.075}	{0.356}	{0.025}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,271	977	977	977	977	1,271
R-squared	0.150	0.125	0.109	0.122	0.117	0.129
Control Mean Pvt	0.241	0.515	0.660	0.718	0.635	0.018
Control Mean Pub	0.183	0.595	0.702	0.686	0.678	-0.063
P-value Effect Pvt=Pub	0.216	0.608	0.251	0.597	0.693	0.943

Note: The BSBY awareness shown in Column 6 is a composite index of the 5 dummies shown in columns 1-5. The question used to create the outcomes "Knows BSBY covers X" is missing for around 290 respondents surveyed before it was correctly included in the survey. See Table 2 for details on the specifications. Robust standard errors in parentheses, p-values in curly brackets.

Table A.5: Exit Strategies

	(1) Tried a new hospital	(2) Switched primary hospital	(3) Switched to non-BSBY hospital	(4) Switched hospital sector (pub/pvt)	(5) Exit: Hospital Selection Index
Post Treatment x Private	0.056**	0.054**	0.024**	0.029**	0.171***
	(0.019)	(0.018)	(0.010)	(0.012)	(0.047)
	{0.003}	{0.003}	{0.011}	{0.020}	{0.000}
Post Treatment x Public	0.008	0.025	-0.014	0.026	0.020
	(0.033)	(0.031)	(0.017)	(0.024)	(0.096)
	{0.803}	{0.412}	{0.416}	{0.282}	{0.833}
Stratum FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	1,280	1,280	1,280	1,280	1,280
R-squared	0.157	0.159	0.091	0.130	0.145
Control Mean Pvt	0.121	0.089	0.011	0.026	-0.035
Control Mean Pub	0.119	0.119	0.032	0.068	0.085
P-value Effect Pvt=Pub	0.206	0.417	0.052	0.929	0.165

Note: Hospital exit measures compare hospitals visited in the last 4 weeks as reported in the survey to those observed in the claims data prior to the start of the study to identify changes. "Tried a new hospital" is a dummy equal to 1 if the patient visited a hospital in the last 4 weeks that was not among the hospitals she visited prior to the study; "Switched primary hospital" is a dummy for whether her primary hospital in the last 4 weeks is different from the sampling primary hospital; "Switched to non-BSBY hospital" is a dummy for whether the primary hospital is not part of BSBY, and "Switched hospital sector (pub/pvt)" is a dummy for whether it is of a different sector (public or private). The "Exit: Hospital Selection Index" is a composite index of these dummies. See Table 2 for details on the specifications. Robust standard errors in parentheses, p-values in curly brackets.

Table A.6: Out-of-Pocket Payments: Breakdown

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	In the last 4 weeks,								
	# hospitals visited for dialysis	Any OOPP at hospital	Knows breakdown of OOPP at hospital	OOPP amount at hospital (if knows breakdown of costs)	Hospital OOPP included payment to med staff	OOPP amount for med staff at hospital	OOPP amount for tests/meds at hospital	OOPP amount for dialysis at hospital	OOPP amount for other items at hospital
Post Treatment x Private	-0.026	0.036	0.005	269.275	-0.037**	-18.573	55.347	158.314	51.231
	(0.018)	(0.030)	(0.012)	(222.631)	(0.015)	(14.628)	(213.869)	(146.146)	(79.496)
	{0.159}	{0.235}	{0.673}	{0.227}	{0.014}	{0.205}	{0.796}	{0.279}	{0.519}
Post Treatment x Public	-0.061**	0.019	0.016	-176.236	-0.016	-5.841	-69.587	-210.609	49.058
	(0.025)	(0.042)	(0.010)	(283.381)	(0.016)	(32.093)	(230.110)	(230.646)	(81.947)
	{0.017}	{0.641}	{0.119}	{0.534}	{0.332}	{0.856}	{0.762}	{0.361}	{0.550}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,279	1,238	1,232	1,202	1,212	1,216	1,204	1,217	1,221
R-squared	0.104	0.269	0.092	0.184	0.175	0.103	0.147	0.102	0.167
Control Mean Pvt	1.085	0.511	0.967	1,780.561	0.076	42.625	1,449.367	327.154	144.686
Control Mean Pub	1.064	0.181	0.986	775.849	0.028	28.558	428.302	394.419	36.651
P-value Effect Pvt=Pub	0.256	0.752	0.461	0.217	0.328	0.720	0.677	0.178	0.985

Note: Public and Private are dummies indicating the sector of the hospital the respondent visited most for dialysis during the sampling period (1-Feb-2018 to 21-Mar-2018), as observed in the claims data. For OOPP at hospital, we asked for the total payments in the last 4 weeks as well as the breakdown of costs between payments for tests, medicines, and dialysis itself, as well as payments directly to the medicial staff or for any other expenditures related to dialysis care. In column 2, we report the total OOPP at hospital only for patients who could report the breakdown of costs. Monetary amounts are reported in Indian Rupees (INR) and winsorized at the 1% level. Differences in the number of observations between columns is due to respondents responding "Don't know" or "Refuse to answer" to specific questions. See Table 2 for details on specifications. Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.

Table A.7: Impacts on Perceived and Technical Quality of Primary Hospital

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Primary Hospital in the last 4 weeks...									
	Perceived Quality					Care Quality				
	Very satisfied with care & cost	Very respectful staff	Very clean facility	Would recommend facility to others	Perceived quality index	No infection/bleeding at fistula	No more than $\frac{1}{2}$ h wait time	Dialysis session lasted 3+ hours	Attended by medical staff	Care quality index
Post Treatment x Private	-0.095**	-0.058*	-0.101**	-0.016	-0.141***	-0.034	-0.021	0.016	0.024	-0.000
	(0.031)	(0.030)	(0.032)	(0.015)	(0.040)	(0.035)	(0.021)	(0.021)	(0.029)	(0.036)
	{0.002}	{0.051}	{0.002}	{0.282}	{0.000}	{0.327}	{0.313}	{0.441}	{0.404}	{0.998}
Post Treatment x Public	-0.081*	-0.067	-0.127**	-0.007	-0.144**	0.020	-0.028	-0.029	0.046	0.005
	(0.049)	(0.048)	(0.047)	(0.032)	(0.067)	(0.060)	(0.039)	(0.039)	(0.047)	(0.059)
	{0.095}	{0.161}	{0.007}	{0.821}	{0.031}	{0.736}	{0.480}	{0.461}	{0.334}	{0.927}
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,240	1,240	1,240	1,238	1,241	970	1,250	1,224	1,280	1,280
R-squared	0.109	0.097	0.110	0.085	0.138	0.088	0.134	0.305	0.065	0.172
Control Mean Pvt	0.714	0.336	0.438	0.951	0.040	0.717	0.901	0.842	0.750	0.043
Control Mean Pub	0.620	0.286	0.385	0.915	-0.099	0.664	0.834	0.703	0.699	-0.148
P-value Effect Pvt=Pub	0.809	0.877	0.641	0.800	0.974	0.434	0.879	0.310	0.698	0.938

Note: The Primary hospital is the hospital visited most often by the patient for dialysis in the 4 weeks preceding the survey. Public and Private are dummies indicating the sector of the primary hospital at sampling. The care quality and perceived quality indices are the first component of a principal component analysis of the indicators shown in the table, expressed in standard deviation terms. See Table 2 for details on specifications. Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.

Table A.8: Summary Statistics on OOPP by Private Patient Strategies

	Post-Treatment OOPP In Last 4 Weeks		
	Mean	SD	Observations
Did not change primary hospital	1927.40	3079.78	292
Switched primary hospital and...			
Went to non-BSBY hospital	5200.77	5526.59	13
Went to another BSBY private hospital	3147.50	5978.81	20
Went to public hospital	235.00	899.87	20
Total Observations			364

Note: Total Out-of-Pocket Payments (OOPP) include payments at the hospital as well as for dialysis-related tests or medicines obtained outside the hospital. Monetary amounts are expressed in Indian Rupees (INR) and winsorized at the 1% level. The sample is restricted to post-intervention survey answers from respondents who had a private primary hospital during the sampling period. All public hospitals in Rajasthan are covered under BSBY, but some patients switched to out-of-state public hospitals, which are not covered under BSBY.

Table A.9: Information Spillovers

	(1) Heard about primary hospital from other patients	(2) Knows other patients at own hospital	(3) Discussed dialysis prices with other patients	(4) Discussed BSBY with other patients
Post Treatment x Private	-0.043**	0.019	0.300***	0.208***
	(0.018)	(0.028)	(0.029)	(0.029)
	{0.020}	{0.499}	{0.000}	{0.000}
Post Treatment x Public	0.001	-0.047	0.223***	0.211***
	(0.023)	(0.041)	(0.044)	(0.046)
	{0.977}	{0.254}	{0.000}	{0.000}
Stratum FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	1,280	1,280	1,280	1,280
R-squared	0.107	0.143	0.177	0.140
Control Mean Pvt	0.136	0.653	0.139	0.235
Control Mean Pub	0.041	0.703	0.146	0.224
P-value Effect Pvt=Pub	0.131	0.190	0.144	0.956

Note: The Primary Hospital is the hospital visited most often by the patient for dialysis in the 4 weeks preceding the survey. Public and Private are dummies indicating the sector of the primary hospital at sampling. "Knows other patients at primary hospital" is an indicator that the respondent knows dialysis patients who went to the same hospitals for treatment as she did in the last 4 weeks. See Table 2 for details on the specification. Robust standard errors clustered at the individual level in parentheses, p-values in curly brackets.