ECONOMIC FINDING • JANUARY 2022

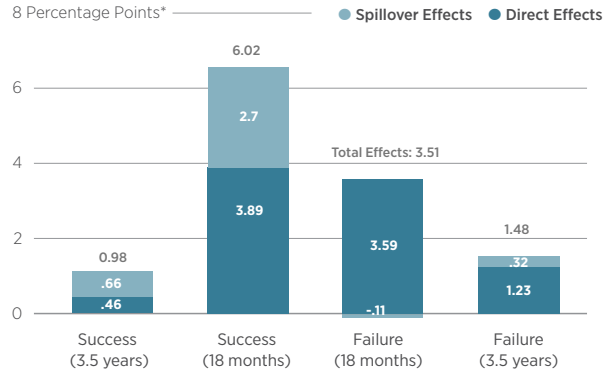
Effect of Health Insurance in India: A Randomized Controlled Trial

Based on BFI Working Paper 2021-146, "Effect of Health Insurance in India: A Randomized Controlled Trial," by Phoebe Holtzman, Jones Lang LaSalle; Kosuke Imai, Harvard; Cynthia Kinnan, Tufts; Anup Malani, UChicago Law School and UChicago Pritzker School of Medicine; Morgen Miller, UChicago Law School; Shailender Swaminathan, University of Alabama; Alessandra Voena, Stanford; Bartosz Woda, UChicago Law School; and Gabriella Conti, University College London

While access to health insurance increased enrollment under a national program in India, and enrollment increased insurance payments for care, many beneficiaries were unable to use their insurance card or otherwise access healthcare and, ultimately, the effect of enrollment on health was insignificant.

In lower middle-income countries like India, households face enormous challenges to finance healthcare. For example, in 2018, 62% of Indian households paid for healthcare out-of-pocket, compared with just 11% in the United States. Further, research shows that many Indian households fall into poverty by health costs, and care is often foregone due to expense.

Figure 1 • Direct and Indirect Effects of Insurance Enrollment on Successful and Failed Attempts to Use Insurance



*Percentage point increase in successful or failed utilization with insurance (relative to being with insurance).

- The direct effect is the estimated effect of enrolling one household, assuming no other sample households in the village are enrolled.
- The spillover effect is the estimated effect on an enrolled household of enrolling all other sample households in the village.
- Total effects are the sum of direct and (spillover effects)*(uptake into free insurance). The total effect of free insurance on uptake is estimated as 0.7871 in Table 2.

To address these concerns, the Indian government in 2008 launched a hospital-insurance program for below-poverty-line households in India with a roughly 60% uptake (abbreviated RSBY) that was replaced 10 years later by an expanded program covering 537 million people (all those the below the poverty line plus nearly 260 million above). The new program, PMJAY, provided insurance largely for free in the hopes of attracting more people to enroll. However, utilization remained relatively low, reflected in the low fiscal cost of the program to India's government, about 1% of GDP.

Why is utilization low? Could lower-income countries like India reduce pressure on public finances, without compromising uptake, by offering the opportunity to buy insurance without subsidies (i.e., pure insurance)? Importantly, does health insurance improve health in lower-income countries? To address these questions, the authors conducted a large randomized controlled trial from 2013-2018 to study the impact of expanding hospital insurance eligibility under RSBY, an expansion subsequently implemented in its successor program, PMJAY. The study was conducted in Karnataka, which spans south to central India, and the sample included 10,879 households (comprising 52,292 members) in 435 villages. Sample households were above the poverty line, not otherwise eligible for RSBY, and lacked other insurance.

To tease out the effects of different options for providing insurance, sample households were randomized to one of four treatments: free RSBY insurance, the opportunity to buy RSBY insurance, the opportunity to buy plus an

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unconditional cash transfer equal to the RSBY premium, and no intervention. To understand the role that spillovers play in insurance utilization, the authors varied the fraction of sample households in each village that were randomized to each insurance-access option.

The intervention lasted from May 2015 to August 2018, including a baseline survey involving multiple members of each household 18 months before the intervention. Outcomes were measured at 18 months and at 3.5 years post intervention, and included measures to address factors that could distort results (see paper for more details). The authors' findings include the following:

- The sale of insurance achieves three-quarters of the uptake of free insurance. The option to buy RSBY insurance increased uptake to 59.91%, the unconditional cash transfer increased utilization to 72.24%, and the conditional subsidy (i.e., free insurance) to 78.71%.

- Insurance increased utilization, but many beneficiaries were unable to use their insurance and the utilization effect dissipated over time, reflecting such obstacles as households forgetting their card or trying to use RSBY at non-participating hospitals. The failure rate was lower among those who paid for insurance, which may indicate that prices screen for more knowledgeable, higher value users, lead to a "sunk cost," or signal quality in a manner that increases successful use. Also, utilization fell over time: 6-month utilization was just 1.6% in the free-insurance group after 3.5 years. Instead of learning-by-doing, perhaps households were disappointed by the difficulty of using the new insurance product.

- Spillovers play an important role in promoting insurance utilization. The magnitude of spillover effects is roughly twice that of direct effects in the free-insurance arm at 18 months, suggesting that peer effects may play a role in learning how to utilize insurance.

- Finally, health insurance showed statistically significant treatment effects on only three outcomes among 82 health-related outcomes across two survey waves. That said, the authors do not rule out clinically significant health effects, and they stress that even this study, which is among the largest health insurance experiments ever conducted, may not be powered to estimate the health effects of insurance.

These findings have implications on the implementation of public insurance in India on two related counts: household use and marketing. In the first case, many households were unable to use their insurance due to complexity and/or lack of understanding. Likewise, policymakers could consider improved educational materials, higher reimbursement rates, and increased investment in IT to expand awareness.

Regarding marketing, spillover effects on utilization have implications for marketing insurance. With a fixed budget, the government may achieve greater utilization by focusing on increasing coverage within a smaller number of villages rather than spreading resources over more villages with lower coverage in each.

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NO. 2021-146 · DECEMBER 2021

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