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Extending health insurance to the poor in India: An impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for healthcare

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ABSTRACT

India launched the 'Rashtriya Swasthya Bima Yojana' (RSBY) health insurance scheme for the poor in 2008. Utilising 3 waves (1999–2000, 2004–05 and 2011–12) of household level data from nationally representative surveys of the National Sample Survey Organisation (NSSO) (N = 346,615) and district level RSBY administrative data on enrolment, we estimated causal effects of RSBY on out-of-pocket expenditure. Using 'difference-in-differences' methods on households in matched districts we find that RSBY did not affect the likelihood of inpatient out-of-pocket spending, the *level* of inpatient out of pocket spending or catastrophic inpatient spending. We also do not find any statistically significant effect of RSBY on the level of outpatient out-of-pocket expenditure and the probability of incurring outpatient expenditure. In contrast, the likelihood of incurring any out of pocket spending (inpatient and outpatient) rose by 30% due to RSBY and was statistically significant. Although out of pocket spending levels did not change, RSBY raised household non-medical spending by 5%. Overall, the results suggest that RSBY has been ineffective in reducing the burden of out-of-pocket spending on poor households.

1. Introduction

In recent years, several developing countries have introduced tax-financed health insurance coverage to their poor populations (Wagstaff et al., 2009; Giedion et al., 2013) India too, joined this effort in 2008, with the Indian Ministry of Labour and Employment (MoL&E) launching the '*Rashtriya Swasthya Bima Yojana*' (RSBY) to protect poor Indian households from financial risks associated with hospitalization expenses. By September 2016, more than 41 million families (about 150 million people) out of a targeted 65 million families, were enrolled in RSBY (http://www.rsby.gov.in/).

We assess the impact of RSBY on multiple indicators of financial risk protection among poor Indian families in contrast to existing studies, which have focused on enrolment, service use patterns, patient satisfaction, and implementation barriers in RSBY (Palacios, 2011; Sun, 2011; Rajasekhar et al., 2011; Das and Leino, 2011; Nandi et al., 2013; Hou and Palacios, 2011). Our paper advances the limited literature that has examined financial risk protection among families enrolled in RSBY. For example, Rathi et al., 2012 and Devadasan et al., 2013 found families enrolled in RSBY continued to incur out-of-pocket (OOP) spending, particularly on drugs and diagnostics, during and/or following hospitalization, despite RSBY being a cashless scheme with no co-payment or fees at the point of service. However, the analyses of these studies are based only on data on RSBY enrollees and lacks controls, and thus cannot identify the program effects of RSBY. They were also limited in their geographical scope, covering one district each (RSBY covers 520 out of a total of 625 districts in India). Ghosh (2014) sought to assess financial protection for poor households covered in RSBY in the state of Maharashtra, and concluded that RSBY did not affect household catastrophic health expenditure. Although a control group of households is used, the study's reliance on cross-sectional data implies that RSBY program effects cannot be separated from unobserved confounders. Finally, Selvaraj and Karan (2012) used NSSO OOP data for pre and post intervention periods (2004–5 and 2009–10 respectively) to assess the implications of health insurance programs for the poor. Although they find no beneficial effects

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of health insurance, their analysis does not specifically assess RSBY (other state-funded insurance programs are in the mix) and does not directly control for observed confounders.

Our paper also contributes to the broader international and Indian literature on the impacts of health insurance programs on household financial risk protection in low- and middle-income countries. According to this literature, increased health insurance coverage has promoted use of health services; but the impacts on financial risk protection are less certain and tend to be context dependent, especially for poor beneficiaries (Escobar et al., 2010; Acharya et al., 2012; Giedion et al., 2013). It has been suggested that the inconclusive results in the existing literature may partly have arisen from inadequate handling of 'observed' and 'unobserved' heterogeneity, reflected in self-selection of sicker individuals into the insurance schemes, differential health seeking behaviour, and various non-price constraints (Wagstaff, 2007; Acharya et al., 2012; Wagstaff and Lindelow, 2008; Wagstaff et al., 2009; Wagstaff, 2010).

The literature on Indian programs other than RSBY is also limited (Nandi et al., 2015). Some studies (Ranson, 2002; Devadasan et al., 2007, 2010) have focused on small-scale community-based health insurance (CBHI) programs, finding that these schemes raise healthcare utilization rates and lower household financial burden. Four recent studies have evaluated relatively large social health insurance schemes in India. Aggarwal (2010) found that the *Yeshasvini* scheme in Karnataka state reduced OOP financed by savings, income and other sources by up to 74% and borrowings by more than 30%. Also in Karnataka, Sood et al. (2014) used a regression discontinuity design across 572 villages to evaluate the *Vajpayee Arogyashree* (VAS) health insurance scheme, finding eligible households experienced reduced OOP health expenditures for hospitalizations. Fan et al. (2012) found that *Rajiv Aarogyasri* (RAS) scheme in the state of Andhra Pradesh reduced inpatient OOP among the enrolled families during 'Phase I' of the scheme but had relatively small impacts on outpatient OOP and catastrophic payments. Finally, Rao et al. (2014) evaluated the effect of RAS using a different dataset to Fan et al. (2012), and found that the program led to significant declines in OOP spending and borrowing for financing inpatient care, in rural areas and among poor households. In contrast to these state-level schemes, however, RSBY has been at the national level, although not all states participated in it.

We assess, at the national level, the impact of RSBY on financial risk protection of households using data from 3 waves of cross-sectional household surveys of the National Sample Survey Organisation (NSSO) and district level enrolment information from RSBY records. We exploit the differential roll-out of the scheme across districts to estimate the causal effects of RSBY on a set of OOP related outcome indicators for households using difference-in-differences (DID) methods, in a set of matched districts. We find that the RSBY did not affect the likelihood of a household reporting any inpatient OOP or catastrophic inpatient expenditure. However, the probability of incurring any outpatient OOP expenditure increased by 23%, while conditional on positive outpatient expenditure, the level of outpatient expenditure declined marginally. Overall, we find little evidence of the impact of RSBY on commonly used indicators of financial risk protection based on OOP spending. However, we do find that household non-medical spending increased due to RSBY.

2. Background on the RSBY scheme

The Indian Ministry of Labour and Employment (MoL&E) launched the RSBY in April 2008, to provide insurance coverage for inpatient care to poor families (or 'Below Poverty Line' [BPL] families). Only households on the BPL list (the list of poor households based on a census conducted by each state) of a state are eligible to enrol in RSBY.

RSBY-covered households are entitled to hospitalization coverage of up to INR 30,000 (approximately US$500) annually for a specified list of conditions. Pre-existing conditions are covered, but outpatient services are not. Coverage is limited to a maximum of five family members. Beneficiaries pay an annual registration fee of INR 30 (approximately US$0.50) per household. The scheme is funded by contributions from the central and state governments and managed by public and private insurance companies, selected via competitive bidding. Covered services under RSBY are delivered by hospitals empanelled under the scheme. Currently, 11 insurance companies (4 public and 7 private) manage the scheme across India, and the number of empanelled service providers (registered with RSBY after meeting the laid down quality criteria) exceeds 10,700 (of which more than 6000 are in the private sector) across India. Table 1 summarizes the main features of the program.

Districts in each state participated in the scheme in a staggered manner. In the first year of RSBY implementation, 20% of all the districts in a state were allowed to participate. In each subsequent year, an additional one-fifth of each state's districts were allowed to participate, subject to availability of adequate numbers of providers, insurance companies and updated lists of poor households. State governments, however, decide whether and when districts can participate in RSBY (Ministry of Labour and Employment, 2008a, 2008b).

2.1. Progress of enrolment

As of September 2016, more than 41 million health cards (signifying enrolment in RSBY) had been issued, covering almost 150 million poor people, with nearly 460 districts participating in the programme. Although the share of eligible households enrolled in the program (enrolment ratio) was 57% nationally, there was considerable variation across districts, as shown in Fig. 1. Enrolment ratios varied from a low of 3% in Kannauj and 6% in Kanpur Dehat districts in Uttar Pradesh, to nearly 90% in many districts of Chhattisgarh and Kerala. The detailed break-down of number of districts covered under RSBY and range of enrolment ratios in participating states is presented in Appendix Tables A-I and A-II respectively.

Not all states participate in RSBY. Andhra Pradesh did not adopt RSBY as it already provides a generous health insurance scheme (RAS) (Fan et al., 2012). The states of Jammu & Kashmir and Madhya Pradesh are officially participating in the scheme, but as of September 2016, none of their districts had enrolled households into RSBY. In two other states (Karnataka and Tamil Nadu), RSBY has been rolled-out in only a few districts, with other districts being covered by their respective state-financed health insurance schemes (VAS and *Yeshasvini* in Karnataka and Chief Minister Health Insurance Scheme [CMCHIS] in Tamil Nadu). These state-specific schemes provide a more generous benefit package (up to INR 200,000 for hospital services) and cover a broader population group than RSBY. Another state, Rajasthan, was still in the early stages of rolling-out RSBY as of September 2016.

Given our goal of evaluating the impact of RSBY, survey households in the 3 states (Andhra Pradesh, Karnataka and Tamil Nadu) with state specific schemes were dropped from our analysis. Households in the state of Delhi were also dropped from our analysis due to the unavailability of district-level enrolment data. Dropping these states reduced the sample by 65,458 households which comes to about 18% of all the households.

An overall enrolment rate of 57% suggests a large number of uncovered households who are otherwise eligible for RSBY. One