State health insurance and out-of-pocket health expenditures in Andhra Pradesh, India

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Abstract In 2007 the state of Andhra Pradesh in southern India began rolling out Aarogyasri health insurance to reduce catastrophic health expenditures in households ‘below the poverty line’. We exploit variation in program roll-out over time and districts to evaluate the impacts of the scheme using difference-in-differences. Our results suggest that within the first nine months of implementation Phase I of Aarogyasri significantly reduced out-of-pocket inpatient expenditures and, to a lesser extent, outpatient expenditures. These results are robust to checks using quantile regression and matching methods. No clear effects on catastrophic health expenditures or medical impoverishment are seen. Aarogyasri is not benefiting scheduled caste and scheduled tribe households as much as the rest of the population.

Keywords Health insurance · Health expenditure · Tertiary care · Poverty · India

JEL Classification I18 · I38 · G22

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Introduction

When an individual falls sick and incurs ‘out-of-pocket’ expenses for health care, the impacts on household finances can be severe. If social safety nets are inadequate, a family can become impoverished not only directly from the out-of-pocket payments for medical care, but also indirectly from missing work, disability, or premature death, thereby leading to lowered income. Insurance reduces the price of treatment faced by a household, and hence may lower the burden of out-of-pocket health expenditures on the household and the risk of impoverishment associated with illness. Yet having access to insurance coverage may increase utilization of health-care and under some circumstances, even increase out-of-pocket health expenditures. Thus insurance need not always lead to reductions in OOP health expenditures, but even then it will usually improve health service use and the health and economic outlook of households that have access to it.

In India out-of-pocket payments on health-care accounted for nearly 68 % of total health expenditures in 2005 (World Health Organization (WHO) 2011), which likely resulted in considerable impoverishment of households. This is suggested by survey-based analyses (van Doorslaer et al. 2007; Garg and Karan 2009) and by qualitative studies undertaken in the Indian states of Rajasthan and Andhra Pradesh (Krishna 2004, 2006). Some authors have suggested that the magnitude of impoverishing effects identified in existing studies, if anything, are underestimated (Flores et al. 2008; Berman et al. 2010). Given that nearly 90 percent of Indian workers are employed in the informal sector and do not have access to formal safety nets (Sastry 2004), health insurance can potentially reduce the financial risk arising from the combination of out-of-pocket medical expenditures and income losses. Yet prior to the expansion in recent years of coverage in India (including the expansion we describe in this paper), formal health insurance (excluding in the form of subsidized public facilities) was limited to less than 10 % of the population and concentrated in the formal sector (Bhandari and Sinha 2010; Ellis et al. 2000).

Available evidence on the impacts of Indian health insurance on household economic outcomes is nascent, in part because until recently there were no insurance schemes with large enough coverage to be of policy interest. The few small-scale schemes assessed for their likely effects were ‘community-based health insurance’ (CBHI) and ‘micro-insurance’, and predominantly operated by non-profit, non-government and civil-society organizations (see Aggarwal 2010; Devadasan et al. 2010; Dror et al. 2007; Ranson 2002). Aggarwal (2010) assessed the impact of the Yeshasvini CBHI scheme, the largest of these, in the state of Karnataka by using propensity-score matching for 4,109 households. Aggarwal (2010) estimated that people who enrolled in Yeshasvini insurance significantly decreased total payments from savings, income, and other sources by up to 74 %, and total borrowings by 30–36 %. Devadasan et al. (2010) evaluated another CBHI scheme, the ACCORD-AMS-ASHWINI scheme, in Tamil Nadu state by observing 545 households; they find that insured patients had hospital admission rates 2.2 times higher than uninsured patients. Earlier, Devadasan et al. (2007) assessed that among ACCORD insurance enrollees, 67 % of households were “protected from making [out-of-pocket] payments” and 8 % would have experienced catastrophic health expenditure in the absence of the insurance scheme. Finally, Ranson (2002) evaluated a CBHI program in the state of Gujarat, the SEWA Medical Insurance Fund (VimoSEWA) using claims data over 1994–2000, finding that the scheme reduced financial burden from hospital expenditures and that expenditures were still catastrophic for 246 of 1,632 claimants after reimbursement. Although the studies are interesting, CBHI in India with perhaps the exception of Yeshasvini has yet to cover a large enough fraction of the population. Moreover, all the schemes cited provide only a limited benefit package. Other barriers to scale-up of