NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH

Working Paper No.: WP 162

The 'missing middle': How to provide 350 million Indians with health coverage?

Ajay Mahal, NCAER and University of Melbourne
Vivek Panwar, P4H India Desk
Arun Tiwari, NCAER
Rahul Reddy, AMREF, Joint Learning Network
Sumit Kane, NCAER and University of Melbourne

February	2024

National Council of Applied Economic Research

'MISSING MIDDLE': HOW TO PROVIDE 350 MILLION INDIANS WITH HEALTH COVERAGE?

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Ajay Mahal, Vivek Panwar, Arun Tiwari, Rahul Reddy and Sumit Kane*

Abstract

Despite recent expansion in its population covered by public-funded insurance, a large section of India's population remains at major financial risk from health shocks. This segment of population, sometimes referred to as the "missing middle," typically consists of population groups that are, or have been, engaged in informal sector work, and are not poor enough to benefit from state subsidized contributions to insurance premiums. We estimate that the missing middle number at least 300-350 million in India, with large variations in their economic circumstances. Using extensive international and India-based evidence, we assess two approaches to cover the missing middle: an expansion in public sector health delivery and a contributory demand-side financing system, that is currently popular in India. We conclude that a mix of the two approaches appears to be the most feasible in the short-run, given limited regulatory capacity and resource constraints, with a longer-run emphasis on integrated systems. Moreover, this approach is also likely to help address the problem of shallow coverage of existing health insurance coverage that concerns large numbers of people extending beyond the group comprising the missing middle.

Keywords: India, *health financing, missing middle, insurance*

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*Corresponding Author: Ajay Mahal; Ajay.mahal@unimelb.edu.au

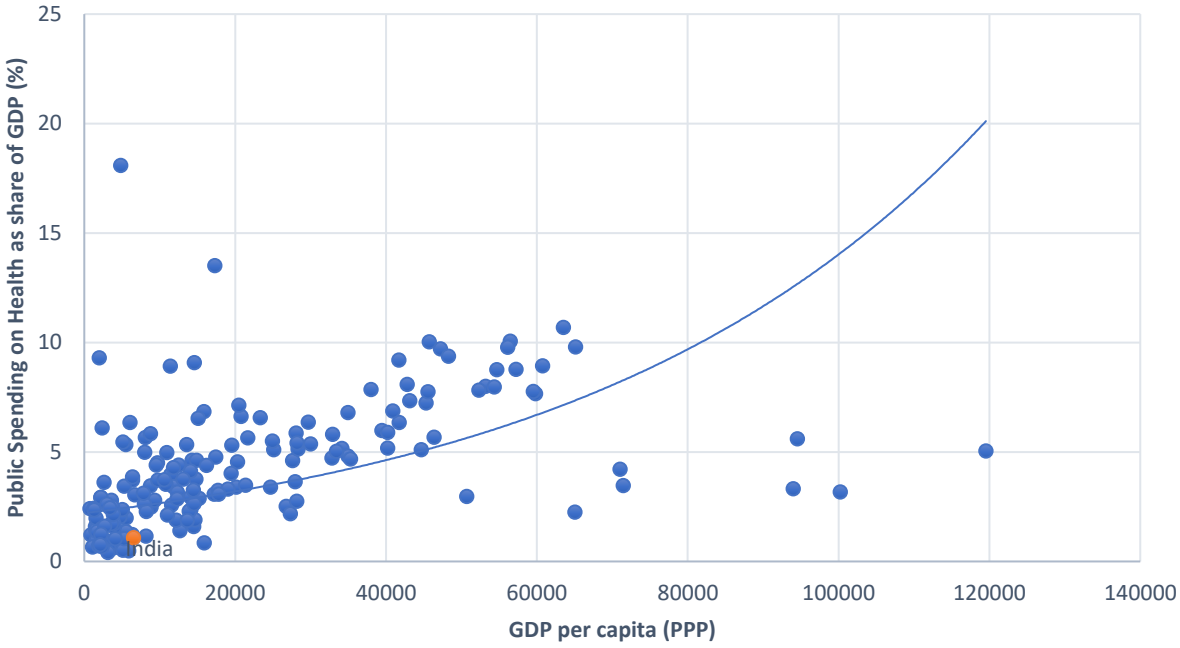
Acknowledgements: We are grateful to Dr. Jack Langenbrunner for comments on a previous draft of this paper. This work was partly supported by a grant from the Health Systems Transformation Platform (HSTP).

I. Introduction

Over the last two decades, countries across the world have been working towards achieving Universal Health Coverage (UHC), broadly taken to be the aspiration that populations have affordable access to good quality healthcare services (Sachs 2012). China, Mexico, Indonesia, and Thailand have extended health insurance coverage to almost their entire population, and others, such as Ghana are making progress, with significant shares of their populations also covered by national health insurance (Wagstaff and Neelsen 2020).

There is a long-standing policy commitment in India to provide affordable healthcare services to its population (Bhore 1946, Ministry of Health and Family Welfare (MOHFW) 2017), which policymakers have sought to meet in 4 main ways, each with its own challenges. The first approach involved strengthening the subsidized public sector healthcare delivery system, through a mix of increased spending and organizational reform (e.g., Peters et al. 2002). However, public spending on health in India, currently at about 1.1% of gross domestic product (GDP), remains amongst the lowest in the world, and certainly below levels that would be predicted by its income per capita (Figure 1).

Figure 1: Government Health Spending in India is Below Expected Levels
***Sources*: World Development Indicators Database & MOHFW (2023)**



Although superficially a mechanism for providing "universal cover", public sector health services in India have been unable to provide healthcare of adequate quality, one consequence of which has been a rapid growth in private sector services, a key driver of out of pocket (OOP) spending (Hooda 2015).

A second strategy has been to expand mandated insurance coverage to a segment of the population – the formal sector – through social insurance, including the Employees State Insurance Scheme (ESIS) for the private formal sector, the Central Government Health Scheme (CGHS) for central government employees, and other schemes for the armed forces, para-military organizations, railways, and various public

sector agencies. Many operate their own facilities, although ESIS especially, has known problems with the quality of its health services (Ministry of Labour and Employment 2018). With formal sector employment at less than 10% of India's workforce, social insurance has obvious limitations as a mechanism to expand population health coverage (Mehrotra 2019). Third, there is voluntary health coverage through private insurers, although mostly it is concentrated among richer households, either as group policies (of employers), or individually held policies (Insurance Regulatory and Development Authority of India (IRDAI) 2023).

Publicly funded (and often publicly managed) health insurance for population sub-groups perceived to be needy constitutes a fourth strategy adopted by central and state governments in India (Niti Aayog 2021). Initial efforts, going back to the 1970s, took the form of Chief Ministers' Relief Funds in various states to support recovery from natural disasters and medical treatments for the needy (Patnaik et al 2018). More recently, large national and state-level schemes have emerged, including the Rashtriya Swasthya Bima Yojana (RSBY), launched in 2008 by the Ministry of Labour and Employment, for the poor and informal sector workers across India, with premiums fully subsidized by the centre and the states (la Forgia and Nagpal 2012; Sood and Wagner 2018). This scheme was replaced in 2018 by the Pradhan Mantri Jan Arogya Yojana (PM-JAY) aimed at providing subsidized hospital cover with larger benefits and targeted to groups experiencing high levels of deprivation, as well as informal sector workers deemed vulnerable. These national-level schemes have been complemented by state-funded health insurance programs.

Progress towards UHC is typically associated with a reduction in out-of-pocket (OOP) spending for healthcare (World Health Organization (WHO) 2010). However, OOP spending on healthcare remains high in India, at about 52% of national health expenditures (MOHFW 2023). High levels of OOP are underpinned by two features of the coverage gap in India: the absolute numbers of people who are not covered by any insurance scheme (other than low quality public services) and the limited financial risk protection available to those covered (Karan et al 2017; Niti Aayog 2021). Addressing these coverage gaps is a key issue confronting Indian policymakers on the pathway to Universal Health Coverage.

A key focus of this paper is on the group, sometimes referred to as the "missing middle", who are not covered under any insurance scheme, although they do have access to subsidized but low-quality public services. Regarding this group, this paper explores the following questions: what is the composition of the missing middle, and what are potential benefits of extending coverage to members of this group? What policy alternatives are available to provide improved financial protection against health shocks to the missing middle, and how do the potential solutions stack up, based on the international and Indian experiences with their effectiveness. Because OOP spending is high even among those ostensibly covered by existing schemes, we also examine strategies for how one might expand the depth of coverage for the Indian population.

II. The 'Missing-Middle' in India: Magnitude and Composition

The National Health Authority estimates that PM-JAY covers 120 million households, or about 550 million people (https://nha.gov.in/PM-JAY), with eligibility being determined on the basis of Socioeconomic and Caste Census of 2011, and/or

whether a household was previously covered by RSBY, the precursor to PM-JAY. People enrolled in state-level public insurance schemes who are not on BPL lists, as in the states of Chattisgarh, Meghalaya, Andhra Pradesh, and Maharashtra, potentially account for an additional 200 million (Hooda 2020, Niti Aayog 2021).

Next there is the population eligible for social insurance, enrolled in ESIS, public sector employee schemes and schemes for the armed forces (Ministry of Statistics and Program Implementation (MOSPI) 2023; Niti Aayog 2021). This number of workers covered by social insurance can be roughly estimated to be 32 million, based on data from covered employees under ESIS, the number of central government employees who are covered (whether by CGHS or under department-specific schemes) and members of the armed forces. Assuming a family size of 4.4, this translates into 141 million covered. We estimate an additional 8 million retired personnel (and their spouses) who have health coverage from these and related schemes, following retirement.

The large number of people covered by social insurance notwithstanding, a substantial chunk of formal sector employees remains uncovered. Table 1 reports the share of workers falling into different employment categories, by self-employed status, casual work, and by regular salary from labour force survey data. Of the estimated 592 million workers aged 15 years and over, nearly four-fifths (or 468.9 million) were engaged in self-employment and casual wage work, mostly in the informal-sector. Even among regular wage/salaried employees, there is a large element of informality: with 58.6% reporting no written job contract, 54% reporting not eligible for paid leave, and 54% not eligible for any social security benefit (MOSPI 2023). These data suggest that 57 million people are employed formal sector jobs, of whom 25 million may not have social insurance cover, including individuals in the private sector who earn above the ESIS threshold and are thus ineligible for its coverage and their family members. Retired personnel belonging to this group are also ineligible for social insurance. Some sections of state and local government employees would not be covered if their salaries exceed ESIS thresholds, although they usually benefit from medical reimbursement schemes with shallow coverage. Some states (e.g., Telengana and Andhra Pradesh) also have publicly funded insurance for their serving (government) and retired employees.

Table 1: Population by Work Status in India (15 years and over), 2022-23

	Employment Status	Share (in percent)	Persons (in millions)
1.	Self-employment (own account workers - employer and helper/unpaid family worker)	32.1	339.7
2.	Regular wage/salaried employee	11.7	123.9
3.	Casual wage labour	12.2	129.2
4.	Others (unemployed, students, housewives, rentiers, pensioners, beggars etc.)	44.0	465.8
	TOTAL	**100**	**1,058.5**

Source: Ministry of Statistics and Programme Implementation (MOSPI) 2023, using data from Periodic Labour Force Survey (PLFS) for 2022-23

Taken together, publicly funded insurance and social insurance covered almost 900 million people in 2023. Private insurance schemes cover about 252 million people (IRDAI 2023), including both group cover and individual cover. Group coverage schemes cater to private formal sector employees with earnings above ESIS thresholds

and their families (employer-employee groups), but also non-employer-employee groups, such as group within a specific occupational category and members of cooperatives (IRDAI 2022). However, there are considerable numbers of people with dual coverage, as individuals can hold multiple private health insurance policies (Sanghvi 2020). In addition, CGHS enrollees can claim from private insurers as well as CGHS, creating incentives for purchase of private cover, so that dual membership of private and public plans is also likely (CGHS 2021). With a population of 1.43 million in 2023 then, the number of people uncovered by insurance is likely to exceed 300 million, possibly closer to 350 million.

Who are the uncovered?

Given the eligibility criteria for publicly funded insurance, individuals who are not working in the formal sector, nor (officially) poor enough to be in the BPL list (plus older individuals from this group) are disproportionately likely to be ineligible for public coverage. Another group likely to be uncovered are current and former employees of state and local governments in states that do not provide publicly funded insurance coverage for this group. Labour force surveys can help provide additional understanding of the socioeconomic and occupational characteristics of the missing middle. In Table 2 we map work status into BPL (below poverty line) status and other indicators of vulnerability commonly used for determining eligibility in public insurance schemes in India. We acknowledge these links are approximate and potentially characterized by significant inclusion and exclusion errors (Bajpai et al. 2017; Sahu and Mahamallik 2011; Saxena 2015; Krishna 2007; Krishna and Shariff 2011). An examination of Table 2 suggests that households in the farm sector (with medium and large farm holdings) are likely to constitute one major uncovered group. A second group is likely to be households where individuals are self-employed in the non-agricultural sector with sufficient large incomes, ranging from small enterprises to high-earning professionals (doctors, lawyers, etc.). Casual wage workers in urban sector and marginal farmers may also be uncovered, although this may vary by the eligibility criteria used in states. Finally, certain slices of formal sector workers (including retirees) may be left uncovered, such as state government employees or former private sector employees covered by group insurance.

It is the above groups that we define as the "missing middle." Aside from certain categories of retired personnel and dependents, the age and gender characteristics of this groups are unlikely to be very different to that of the covered population. However, there is considerable economic variation within the missing middle, suggesting that if program targeting is necessary given its size and limited resources, it will be important to distinguish between people eligible for subsidized premiums and others.

We also wish to underline that even for the group covered by public insurance, almost 900 million, the depth of coverage varies considerably across states and schemes, with inpatient cover being common, and outpatient cover relatively rare under publicly funded insurance. In addition, insurance policies in the private insurance sector are characterized by high administrative expenses, and shallow coverage. Although the population has access to subsidized public facilities for outpatient care, access and quality vary considerably across states and across rural and urban areas. Together with the missing middle, this group accounts for a large share of OOP spending in India, much of it on drugs and outpatient services.

Rationale for Covering the Missing Middle

There is a good case for expanding coverage of health insurance programs to the missing middle group. Expanding coverage could contribute to improved equity in financing in two ways. First, given that the missing middle are a mix of upper-income populations, alongside the middle-income and the near-poor, expanding coverage to at least some (of the poorer) sections of this group would improve their access to affordable healthcare. Moreover, including the economically better off and healthier sections of the missing middle could additionally contribute to cross-subsidization of poorer groups, including political support for additional government funding, provided the added resource costs of covering this group are not too high.

There are efficiency arguments for coverage expansion, as well. For instance, extending coverage to this group could enable additional economies of scale benefits arising from a larger enrollee base, including benefits from integrating preventive care and health promotion with curative services. Shallow benefit packages offered by private insurers are often a factor that discourages households who could otherwise benefit from and could afford health insurance, reflecting the well-known problem of insurance market failure. But market failure could also take the form of inadequate access to information about health insurance products, inability to predict health risks, and 'waste aversion' as when households do not plan on using the cover to fund healthcare (Suter et al 2017). The high levels of out-of-pocket expenditure for healthcare in India, especially for the non-poor, suggests some mix of these explanations is potentially relevant (Sekhri and Savedoff 2005; MOHFW 2023). Devising effective means to expand coverage to such households will enhance their financial risk protection and contribute to improved social wellbeing.

Table 2: Characteristics of Formal and Informal Workers and Eligibility for Public or Social Insurance Coverage

Type of Household[#]	Characteristics[*]	Pre - Pooled scheme
Rural landless labour, disabled, destitute, female-headed households	Very poor, few assets and little or no income	PMJAY/State schemes
Rural – Agricultural Labor	Very poor, irregular income, less than $2-$4 per day	PMJAY/State schemes
Rural – Marginal and Small Farmers	Poor – Near Poor, $4-$20 per day, irregular income	State schemes (but not in all states)
Rural – Large Farmers	Better-off, more than $20/day, irregular income, illiquid assets	Not eligible for most subsidized schemes
Self Employed (non-agriculture)	Poor, usually less than $2/day	Potentially eligible for PMJAY and/or state schemes
Self-employed (non-agriculture) Non-	A heterogeneous group with islands of high-income self-	Not eligible for subsidized insurance – could obtain commercial Insurance

Type of Household#	Characteristics*	Pre - Pooled scheme
employer with less than 10 workers	employed. Regular income, more than $20/day	
Petty retailing	Very poor	PMJAY/State scheme
Casual wage work (urban)	Poor – Near Poor, regular/irregular income with vulnerability to health risks	Not usually eligible for subsidized schemes
Urban Regular Employed (salaried)	Non -poor to High Income; Formal with or without elements of informality	No Scheme eligibility/ CGHS and other Central Employee Coverage, Commercial Group, and Individual Insurance
Urban Formally Employed (below a certain wage)	Regular pay-roll job, non-poor, often blue-collar workers	Mandated eligibility for ESIS (unless under private group cover)
Government Employee, Public Sector Enterprises, Ministries	Regular payroll job with regular income	Eligible for CGHS, Defence, ECHS, Railway, Public Sector Undertaking (PSU) schemes

Sources: Synthesised from MOSPI (2023) and National Commission on Employment in Unorganised Sector (NCEUS 2007). See also Steven and Evangelina (2013). *Note*: PSU = Public Sector Undertaking; CGHS = Central Government Health Scheme; ECHS = Ex-Servicemen Contributory Health Scheme; ESIS = Employees' State Insurance Scheme

III. Covering the Missing Middle in India: Alternative Strategies

Many countries, including LMICs, have been, in a situation like India. The strategies adopted by these countries to cover their missing middle offers important lessons to policymakers in India and other countries planning to expand coverage. The experience of India's own states, with their differing benefits packages and population eligibility criteria, offer lessons of their own. We draw upon these lessons, along with those of other countries to assess how to expand coverage to this group in India.

The available literature points to two broad policy approaches to cover the "missing middle" in India: (a) expansion of subsidized public services, or (b) contribution-based cover, provided either by the government or by private insurers, with or without public subsidies. These are not necessarily either-or options, and combinations across these options are also possible. We shall consider each in turn, focusing on their implications for effectiveness, efficiency, equity, cost, and feasibility.

The Public Service Delivery Option

The Bhore Committee report (Bhore 1946) laid out a vision for health service delivery and financing for India with the public sector as the major provider (and funder) of care. With low levels of income per capita and a small private sector at the time of India's independence, this strategy seemed appropriate. The experience of the

state of Kerala where health outcomes have been strong historically, is a successful example of this model with longstanding public sector investments in health (Kutty 2000). At least two other states, Himachal Pradesh, and Tamil Nadu, have invested significant resources in their public healthcare delivery systems in recent decades (Dasgupta and Rani 2004; Sharma and Kapila 2019; MOHFW 2023).

Cross-state and micro-studies for India suggest that improved public sector services are associated with health improvements, equity in health service use, and sometimes, efficiency improvements as well. Increased public sector spending on health services was found to lower infant and adult mortality (Bhalotra 2007; Farahani et al 2010). In Chattisgarh state's government primary health centres, improved doctor competence and availability in clinics was associated with lesser patient bypassing of public primary care facilities (Rao and Sheffel 2018). Increased spending on public services was also associated with greater use of public sector outpatient services by the poor and lowered use of private (informal) providers (Mulcahy et al. 2021). Bowser et al (2019) found that government services tend to be pro-poor for outpatient care, although not for inpatient care. Mulcahy et al suggest that even a small increase in public spending - of INR 100 per capita – could lead to large increases in health care utilization by the poor, and away from informal providers. Moreover, high social returns from investments in health also justify larger public spending on health.

Collectively, these studies support the view that expanded public service provision could enable progress towards UHC. Because identification of economic status is not critical when subsidized services are available to all, the costs of separating out the near poor and the poor from wealthier groups are also avoided.

Ignoring for the moment arguments against public delivery of services, can India fund a major expansion of public services? Long-running fiscal deficits were a key factor in constraining government health sector investments in Kerala, beginning in the 1980s, and India's fiscal crisis in the 1990s led to a lengthy period of reduced public spending on the social sector (Kutty 2000). However, the recent expansion of publicly subsidized insurance suggests that fiscal constraints may not be that tight, especially given that some schemes cover populations beyond the poor. The states of Rajasthan and Andhra Pradesh use relatively loose definitions of poverty to cover large shares of their total population with full premium subsidies; and offer universal free access to essential medicines (Selvaraj and Mehta 2014).

The experience of Sri Lanka and Malaysia is pertinent even if fiscal constraints are assumed to be binding. Malaysia's public spending on health has hovered around 2% of GDP, with OOP spending of about one-third of aggregate health spending. Because OOP spending in Malaysia is concentrated among the better-off, its health system has produced outcomes consistent with the UHC goal of affordable and good quality services being accessible to all (Rannan-Eliya et al. 2017). Inpatient and outpatient use rates in Malaysia are comparable with high income countries and catastrophic spending rates are extremely low. At around 2% of GDP, the Malaysian public sector services can achieve reasonable quality, but are not as attractive to high income households, who end up choosing to pay for private care, not because they have no choice, *but because they can afford to*. The identification issue–separating out the rich who can pay more for care, from the rest - is resolved by their self-selecting out of public services (Besley and Coate 1991). A roughly similar strategy has been adopted by Sri Lanka where, despite

an OOP share in national health expenditures of almost 50%, medical impoverishment due to health expenditures is low (Rannan-Eliya and Sikurajapathy 2009).

Both Sri Lanka and Malaysia have also invested heavily in primary care, especially rural areas where many poor live, effectively self-selecting richer groups (who tend to be urban based) out of the parts of the publicly funded health system. The Indian state following a similar strategy is Tamil Nadu (Dash and Muraleedharan 2011). By focusing on primary care and secondary services interventions, and scaling up immunization, Tamil Nadu has greatly improved health outcomes for its rural population (World Bank 2019).

Relying on the richer groups to self-select themselves out of the public system, effectively limiting the fiscal burden of public sector services, can also be observed in Australia, a high-income country. In Australia, high marginal tax rates on richer households that forgo private health insurance cover, incentivize better-off groups to purchase private health insurance and services (Stoelwinder 2014). Because private insurance also funds care in public hospitals, private resources help finance public services in this model, albeit with some risk selection issues. One study found that patients with more severe health conditions were more likely to be transferred from private to public hospitals (Cheng et al 2015). Nonetheless, because even these patients are funded by private insurers, the public system can access resources which they otherwise would not have.

A central argument against this option is that public services cannot be effectively delivered in India, due to poor state capacity to manage service provision. Researchers have cautioned that additional health resources for the public sector are akin to affixing "band-aid on a corpse" (Banerjee et al 2008). Timely availability of funds and poor resource utilization has remained an ongoing concern, alongside governance and oversight challenges related to the health sector. Studies demonstrate high rates of absenteeism among healthcare workers in public facilities (Muralidharan et al. 2011), low quality among government (and private) healthcare providers, a significant "know-do" gap (Mohanan et al. 2017; Dash and Muraleedharan 2011), inequities in access to inpatient care in public hospitals (Mahal 2005), and a lack of strong governance structures to improve provider accountability (Banerjee et al 2008). These findings would suggest that added spending on public sector delivery in India could be both inefficient and inequitable instead. But against this, there is also evidence of excellent public health sector performance of some Indian states, such as Tamil Nadu and Kerala (Dash and Muraleedharan 2011), and a track-record of government underinvestment in the public sector that is likely to have hamstrung its long-term performance. And service delivery in the private sector is also poor. At the very least, demand side financing implicit in the PM-JAY is not the only option to cover the missing middle. In a decentralized polity such as India, a mix of strategies might be appropriate, including expanding investments in public services.

The Contributory Scheme Strategy

Countries have taken different routes to ensure 'buy in' from the missing middle for insurance. In the Republic of Korea, and in China, uncovered populations "voluntarily" pay premiums to join, but with an element of arm-twisting (as in China where local political leaders were pressured to increase enrolment), and premium subsidies (Hsiao et al 2014; Kwon 2009). In Vietnam, the government issued a mandate to enrol in social health insurance (Mao et al. 2020). In Thailand, the government fully

subsidizes premium contributions to the public insurance for individuals not covered by existing schemes catering to the formal sector (Tangcharoensathien et al. 2007). And in several European Union countries (e.g., Netherlands), a combination of mandatory participation with individuals being able to choose insurers has been adopted (Saltman and Dubois 2004).

In India, strategies adopted by state governments mirror those internationally, although there is substantial cross-state variation. The Arogyasri scheme of Andhra Pradesh (AP) uses a loose definition of economic hardship (e.g., not owning car, having less than 35 acres of land, annual income less than INR 500,000 (or US$7,000)) for fully subsidized premiums. The AP state government offers the *Arogya Raksha scheme* to households that do not satisfy the economic eligibility criteria, to voluntarily enrol for premium payments ranging from INR 1,200 (US$17) to INR 62,500 (US$900), depending on the benefits package. In Rajasthan, government-funded insurance fully subsidizes premiums for the poor; the rest have the option of voluntarily enrolling themselves at a premium of INR 850 (US$12) annually per family, with an enrolment incentive in the form of a free smartphone (Mint 2021). In Himachal Pradesh, the government combined 3 population groups into a single pool – individuals eligible for PM-JAY (full premium subsidy), highly vulnerable groups (people over 70 years, disabled, women-headed households, street vendors) who pay an annual premium of INR 365 (US$5) per household to enrol, and the rest who can enrol at an annual premium of INR 1,000 (US$15) per household, well below premiums for private cover in India. In Chattisgarh, the government does not charge a premium for people above the poverty line, but the health insurance cover is smaller relative to people below the poverty line (INR 50,000 versus INR 200,000). Nationally, the PM-JAY scheme is exploring the idea of private voluntary insurance to increase enrolment among the missing middle (Niti Aayog 2021).

Should premiums be subsidized?

To summarize, the international literature suggests that in low- and middle-income country contexts, large government subsidies are required to enrol the missing middle group into health insurance, irrespective of who the insurer (public or private) is, and irrespective of whether the coverage is voluntary or mandated.

The evidence on the impact of subsidies on insurance enrolment is compelling. As of August 2021, Indonesia's national health insurance scheme covered about 83% of its population, about one-half being poor with fully subsidized premiums (Asante et al 2023). One-third of this group were covered through contributions based on their work in the formal sector, or contributions from a mix of pensions and the government for retirees. The remaining enrolees were non-poor, with the option of contributing to premiums on a sliding scale, matched to a benefits package. With most non-enrolees in national insurance also belonging to the last group, the coverage rate for the non-poor in the informal sector was only slightly more than one-fifth. Even this involved considerable self-selection, with high claims-ratios (6.5:1) among those enrolled (Banerjee et al. 2019; Dartanto 2017). Surveys suggested their non-enrolment stemmed from problems in getting registered, lack of information about the scheme, and perceived costs of coverage outweighing the benefits. Although only one-fifth of the surveyed individuals mentioned affordability as a problem, subsidies mattered: high levels of premium subsidies (amounting to 50%-100% of the premium) led to an almost 8-fold increase in enrolment (Banerjee et al. 2019).

In Vietnam, beginning with a compulsory contributory scheme for government employees and pensioners in 1993, and voluntary participation for family members, coverage progressively expanded (over 5 reform stages) to cover almost 87% of Vietnam's population by 2018 under a single national scheme (Lê et al. 2019; Teo et al. 2019). One-quarter of the covered population consisted of government and enterprise employees with premiums financed by employer and employee contributions. About 40% of the poor and near-poor, plus children aged 6 years or less and the elderly population, were fully covered by tax-financed premium contributions. The remainder could be termed the missing middle. With population coverage hovering around 60% as recently as 2010, the government mandated the participation of households not covered under the employee or fully subsidized schemes in 2014. However, partial subsidization of premium contributions across a broad swathe of this previously uncovered population is likely to have been key to increased coverage. Even so, there is evidence of adverse selection in this last group, with much higher rates of health care use and claimed expenditures relative to the average enrolee (Lê et al. 2019).

The Republic of Korea started with a relatively small sized informal sector at a time (about one-quarter of the work force) when its national health insurance was extended to the self-employed in the late 1980s (Kwon 2009). The government strategy involved classifying insurance pools by sub-groups within the self-employed population (referred to as "insurance societies") to save on the effort to disentangle incomes, instead using group-specific information from other sources to determine income-based contributions. The insurance societies were essentially quasi-public bodies, tightly regulated, and did not compete for members. Despite an autocratic polity in the country at the time, high levels of premium subsidy (44% of total contributions) were needed to ensure the support of self-employed groups. Subsidies were also needed because mandated levels of benefits were regulated to be identical across insurance societies (including societies catering to the formal sector), but incomes among self-employed populations were inadequate to support premiums required to finance mandated benefits packages. Nevertheless, the societies remained deficit prone, a factor that led to a single pool national health insurance in 2000, with partial premium subsidies for the self-employed and full subsidies for the poor, with poverty being continually (annually) assessed by a measure of income and property held by a household (Kwon 2009).

Subsidies also influenced the growth of China's health insurance coverage, now at almost 100% (Li and Li 2019). China's risk pools can broadly be classified into two categories, the UEMBI (Urban Employee Basic Medical Insurance) and the Urban-Rural Resident Medical Insurance (URRMI) (Wang et al. 2020). The former covers about 300 million urban workers, with one billion being covered under URRMI, comprising non-workers in urban areas and rural residents. Within UEMBI, there are differences in premiums and coverage, and separate pools both geographically and across groups, for formal sector workers, the self-employed and retirees. Premium contributions for the self-employed are based on the average salary in the area, with lower premiums for retirees. *All schemes* under UEMBI receive government subsidies. The URRMI is heavily subsidized by governments (typically 80% of the premium), although the extent of the subsidy varies by fiscal capacity of local governments. Additionally, local leaders were incentivized by the party leadership to increase enrolment by linking expanded coverage to their future career prospects (Hsiao et al 2014). Apart from high levels of enrolment, benefit limits and co-payments limit the impact of adverse selection under UEMBI and URRMI.

Thailand's approach varies from previous country examples by its explicit reliance on general revenues to cover the missing middle. Prior to 2001, health coverage in Thailand broadly fell into four main groups. The civil servant scheme offered generous benefits to government employees (and their dependents) financed by general revenues; a social security scheme covered employees in the formal sector (but not their dependents); a 'low-income scheme' covered poor individuals, elderly, and young children with 100% premium subsidy to about one-third of the population; and a voluntary card scheme covered individuals in rural areas on a contributory basis for another 20%. This left uncovered dependents in the private formal sector, and various categories of non-poor, including informal sector workers in urban areas, amounting to some 30% of the population (Tangcharoensathien et al. 2007). In addition, the 'low-income scheme' with 100% subsidy was poorly targeted, reflecting the challenge, of identifying the poor in a large informal sector. Although a 50% premium subsidy helped increase the proportion of people covered under the voluntary card scheme, from 1% in 1991 to almost 21% in 2001, there was evidence of adverse selection (Supakankunti 2000). The 'universal' coverage scheme introduced in 2001, covered the poor, the uninsured and the informal sector worker population in one pool, and fully financed from general revenues, leading to a rapid scale-up of the scheme. Thailand has achieved this high level of coverage with a public spending on health of about 2.8% of GDP, as in China, and with a more generous benefits package. This achievement though was underpinned by rapid growth of the Thai economy, and by a favourable political climate, and with prime ministers consistently backing the state subsidised coverage of informal sector workers.

Many Indian states have followed a 'premium subsidy' model alongside voluntary enrolment. Starting in 2018, a mix of HIMCARE (Himachal Pradesh state public insurance scheme) and PM-JAY was intended to cover all individuals in the state of Himachal Pradesh. Poor individuals, whether classified as such by PM-JAY or under state guidelines, had their premiums fully subsidized. For other vulnerable groups, enrolment premiums were well below the cost of coverage in most private insurance plans in India with comparable benefits, as noted above. The Arogyasri scheme of Andhra Pradesh state, when launched in 2007, also had a loose definition of household poverty, and provided a 100% premium subsidy. The state of Rajasthan too, is moving in this direction. The Megha Health Insurance Scheme (MHIS) of Meghalaya state provides 100% premium subsidy for all, except employees of the state government. Although enrolment rates are high as a share of the population among subsidized groups, evidence on the enrolment rates among non-subsidized populations is unavailable for states, although the experience of the Yeshasvini scheme, discussed next, is instructive.

Karnataka state's Yeshasvini scheme was launched in 2002 and was targeted at members of the registered co-operative societies - mainly agricultural sector workers - comprising 70% of the state's population. Enrolment was voluntary; initially, and effectively automatic by virtue of co-operative societies paying premiums on behalf of members, enrolling them in the scheme. Evaluations of the scheme revealed improved utilization of healthcare and lowered out-of-pocket spending, although these effects were more pronounced for better-off households (Aggarwal 2010). While it was recognised at the time of the launch of the scheme that member contributions would be insufficient to cover the costs of benefits, and government subsidies would be required, not everybody in the government saw the rising use of services and costs of the scheme

as desirable. The cost to the government rose from INR 28 (US$0.40) per capita in 2003-2004 to INR 393 (US%5.50) in 2016-2017. Simultaneously, many members who were effectively compulsorily enrolled in the scheme previously, chose not to renew their membership (Kuruvilla et al 2005). Over the period from 2003-2004 to 2016-2017, members as a proportion of the eligible population fell from 13.9% to 5.7%.

Implications

The significance of subsidies for increasing enrolment among individuals in the missing middle, suggests that progress in enrolment will have fiscal implications if the informal sector is large, as in India. Moreover, there remains a high risk of adverse selection, even when enrolment is deemed 'mandatory'. Although it is generally desirable that a person receives care when in need, even with adverse selection, the benefit so obtained could be deemed inequitable if regular contributors or taxpayers subsidize this individual, especially if they are non-poor. Thailand's early experience with enrolling low-income groups suggests that poor groups might end up being excluded from coverage if the poor cannot be readily separated from the non-poor when fiscal constraints limit extending coverage to all. Without a strategy to continually identify economic status over time, the choice appears to be between high levels of subsidy to enrol the missing middle, as in Thailand, which gets around the selection and equity issue altogether, or to adopt a longer-term strategy to wait for the formal sector to become large as a share of the economy, perhaps with voluntarily added coverage in the interim. This latter strategy is what India is currently pursuing in most states, via a mix of private and public insurers.

Private versus Public Sector Insurers

The argument in favour of private insurers is their greater responsiveness to incentives, and that if enrolment increases were sufficiently incentivized, high rates of enrolment will result. This premise also guided some publicly funded health insurance schemes at the national and state levels in India in their engagement with private insurers, given that revenues from negotiated premium rates under which they contracted with governments to manage publicly funded schemes were dependent on the number of eligible people enrolled. A study of the roll out of RSBY program in Karnataka that involved private insurers in enrolment, found that 85% of the eligible households in 4 sampled districts were aware of the scheme, and 68% were enrolled within one year of the roll out of the program (Rajasekhar et al 2011).

The private insurer (or administrator) of the public sector RSBY scheme in Karnataka was incentivized to enrol, as it triggered premium revenues fully subsidized by the government, but not incentivized to increase utilization, which would have increased claim payouts. Thus, 'smart cards' that could help facilitate access to services were handed out to only two-thirds of the enrolees, the process of empanelling hospitals under RSBY was delayed, as were insurance reimbursements to empanelled hospitals. In Andhra Pradesh, a state that experimented with both the private insurer-intermediary model to manage the enrolments and claim payouts and a 'Trust' model (essentially an autonomous agency with substantial government and other stakeholder involvement), administrative costs were higher and claims ratios lower for private administrators, compared to the Trust (Nagulapalli and Rokkam 2015). Other researchers concluded that private insurers and the firms they contract to enrol (under RSBY), "economize their enrolment process in term of village selection, …" (Palacios et al 2011). The schemes in Andhra Pradesh and Karnataka were both characterized by a

100% premium subsidy and no pre-existing condition exclusions, so selection into the scheme by sicker populations (as in Indonesia and Thailand's voluntary health card scheme) should have been limited, although risk selection by insurers during enrolment could occur.

Incentives for enrolees and insurers can change dramatically when enrolee contributions are not subsidized, enrolment is voluntary, and insurer profits depend on who they enrol, as when the missing middle are targeted via private insurers, with two key implications. First, poor individuals who, for whatever reason, are misclassified as being ineligible for the 100% subsidy under the PM-JAY or state health insurance schemes would likely fall through the cracks for lack of ability to pay. Second, individual policy holders would be more expensive to enrol than groups, owing to adverse selection and corresponding risk selection by insurers, and even left out altogether from coverage (Malhotra et al 2018). Thus, group insurance is preferable, ideally with compulsory enrolment for the group's members. Even then, the ability to pay among group members will likely determine the benefits package, as in Korean insurance societies prior to 2000. Without subsidies for premiums there will be cross-group inequities (Kwon 2009). And, unless competition for the insured across risk pools is tightly restricted as in Korea and China, private insurers may generate inefficient competition aimed at attracting groups with lower claims ratios in India.

Mandating a common package across groups, no individual risk rating (that is, premiums are based not on the individual's own claims experience but that of a larger group – sometimes referred to as community risk rating), and the use of 'risk equalization' approaches offer a way out of incentives favouring risk selection. Risk equalization typically involves reallocating premium subsidies, if the government or national insurance agency subsidizes premiums, to different insurers depending on their claims experience relative to the community risk profile of their members, as in many European countries. In Australia, resources are reallocated from insurance companies that have a more favourable claims experience, compared to others that have a less favourable one, at the end of each year (Stoelwinder 2014). But this requires considerable regulatory capacities, which are sometimes lacking even in high-income countries – and are certainly a major constraint in India.

Can public and private insurers can exist side by side? A public insurer, such as the National Health Authority in India, can regulate by competition, offering a guaranteed product to members of the uncovered middle. The Chilean experience though, suggests a situation whereby the public insurer ends up with individuals with high claims expenses, with private insurers carrying out extensive risk selection to enrol the healthiest population segments (Roman-Urrestarazu et al. 2018). Following reforms in 1980, the Chilean insurance system consisted of FONASA, the public insurer, and ISAPREs, a collection of private insurers. The poor were covered by FONASA, and civil servants were covered under a separate scheme. The rest could either access FONASA with premiums pre-set at a share of the wage; or, if they chose ISAPRE, they could use the same wage-based contribution, along with a top-up, since the premiums were typically greater than the wage-based contribution rate. The ISAPRE practised individual risk-rating in setting premiums. Individuals with low incomes, or those with a history of illness typically ended in FONASA, so that the share of social insurance contributions received by ISAPRE was substantially higher than their share in health spending (Holst et al 2004), with adverse implications for both equity and efficiency. Recent health insurance reforms in Chile have tried to address these concerns by

lowering incentives for risk selection by setting a base premium for a standard benefits package and establishing limits on how far ISAPRE premiums could move away from this standard, introducing risk equalization funds to compensate insurers with higher claims ratios and limiting individual risk rating.

The preceding discussion has implications for progressing contributory health insurance in India for the missing middle. Given that government policy documents (e.g., Niti Aayog 2019) often discuss a role for public insurers (such as the ESIS or the National Health Authority) in progressing the coverage of the missing middle, three key challenges are apparent. First, ESIS is likely to require considerable enhancement of its capacity to manage its insurer role, including ways to greater accountability to its enrolees, by improving its healthcare services, and paying attention to equity objectives. Second, relying on private insurers in this environment will mean directing attention to multiple regulatory issues, including standardization of benefits packages, incentives to promote group coverage, and perhaps risk equalization. Finally, relying on mandatory enrolment without large premium subsidies to limit adverse selection and increase enrolment is unlikely to work, given the experience of Vietnam, Indonesia and elsewhere, as potential enrolees in the informal sector may discontinue their premium contributions if their incomes are uncertain, or choose to selectively insure themselves when sick.

IV. Implications on ways forward for India

Countries that have been able to address the burden of OOP spending, including LMICs, have done so only through successfully implementing some form of population level risk pooling. Thailand's universal coverage scheme helped reduce the incidence of catastrophic spending from 6% in 1996 to 2% in 2015; the number of people falling into poverty due to health-related causes also decreased significantly (Tangcharoensathien et al. 2020). Similarly, Vietnam's social health insurance increased population coverage from 47% to 70% between 2008 and 2014; in this period Vietnam saw a reduction in catastrophic spending from 5.5% to 2.3% and a reduction in health-related impoverishment from 3.5% to 1.7% (Lê et al 2019). How might one do this in India, given the large number of the people who are likely to be left uncovered under existing schemes?

As noted above, one possibility is increased investments in public sector health provision leading to a strengthened public sector that provides subsidized services to all could yield improved health outcomes, improved protection against financial risk among the poor and informal sector populations while avoiding potentially high costs of identifying the poor. Good quality public services could also offer competition to private sector providers, and an element of choice to users of health services.

As against this, one can take the view that the proverbial "ship has sailed," given the large and growing central and state government investments in publicly financed insurance for the poor that support both public and private inpatient care, with financial incentives driving performance. At the very least, given the added funding for hospital cover that existing public programs provide, further supply side financing for public sector hospital services is unlikely to be directly available.

How about supply-side investments in the public primary care sector? Primary sector investments could also help address a major driver of OOP spending in India,

namely outpatient services, and thus help address risk protection concerns raised by a relatively shallow private insurance coverage, and public sector insurance that emphasizes hospital-based care. The 'Ayushman Bharat' is the latest in a series of national and state level initiatives to try to improve public sector primary care in India, which has tended to be pro-poor. Investments in public primary care services in rural areas of India where a large share of the poor population and informal sector workers reside, can improve utilization and lower private provider use by the poor. While serious questions have been raised about public provision of health services in India, private provision of primary care also has its own problems, including a vast number of unqualified providers, weak regulatory oversight, and few checks over quality of care and fees charged. And there is a track record of good service delivery at the primary care level in at least a few states, which could serve as a model for others. Given that there is already an infrastructure, including that supported by the National Rural Health Mission, additional financial investments in the primary sector to improve service quality might be manageable.

If investments in public sector delivery are not forthcoming, another primary care option might be a model that permits access to public and private outpatient services, as for example, in Australia (and some other countries), with all providers satisfying certain qualifying standards being reimbursed by a central payer, or public insurer at the state level. In Australia though, due to a longstanding constitutional provision, general practitioners can independently set fees above the reimbursement rate, resulting in high OOP payments. In India, where large numbers of individuals pay out of pocket for private outpatient care, it will be difficult for insurers to set provider payment rates, without addressing the private providers' access to an alternative market - health services for individuals with direct OOP payment. Thus, harnessing (pooling of) OOP payments is potentially a key step to effective engagement of private primary care providers for serving UHC objectives, a challenging assignment. In the interim, subsidized public sector primary care services will likely be key to addressing the healthcare needs of the less well-off among the missing middle and the poor. The proposed heavy investments in infrastructure for public healthcare delivery in India, labelled the "Ayushman Bharat Health Infrastructure Mission" (MOHFW 2021) is aligned to this view.

Box 1: Pros and Cons of Premium-Based Inpatient Coverage for the Missing Middle in India

Pros

- Sidesteps governance and accountability challenges of public service provision, and builds on existing program experience at the state and national levels
- Adds resources to the health sector, including to public facilities.
- Introduces accountability among providers as funding tracks patients

Risks

- Without publicly subsidized contributions, enrolment rates remain low, and adverse selection risks high
- Limited oversight and management capacity for regulation if there is competition among insurers
- If resources are limited, will incur costs on identification of poor and vulnerable segments of the missing middle for equity

For inpatient services, the message from the literature is broadly that if public resources are sufficient, the most effective mechanism is providing highly subsidized cover for all. Some Indian states are moving in this direction. The alternative, suggested in a government policy paper (Niti Aayog 2021), that members of the missing middle mostly pay their own premiums will result in a smaller fiscal burden on governments (Box 1). But the consequence is likely a slow expansion in coverage. Leaving the responsibility of covering the missing middle to private insurers is likely to be even less successful than via publicly funded insurance, and even then, the strategy would need to be centered around insurance of groups. Strong regulatory oversight would also be needed to manage insurer competition, which the IRDAI and the states currently lack.

Longer Term Prospects

Thus far we have stressed two relatively unlinked strategies to progress towards universal coverage in India – an approach that relies on public services to provide universal access to primary care, and a strategy of subsidized premiums to provide hospital coverage. This model can be financially costly though, without strong two-way referral linkages, or inpatient gatekeeping functions. Currently, third party hospital coverage insurers, such as the National Health Authority of India or the State-level insurers, do not have the capacity to execute or exercise oversight of referral linkages. However, concerns about patients bypassing primary care and heading directly to specialists (and associated inefficiency) are well recognized in India and elsewhere and are an important reason for integrated service provision by organizations such as *Kaiser Permanente* in the United States, and more recently, insurance-funded integrated provision of healthcare services in Thailand.

The approach adopted by Netherlands (and some other Northern European countries) to achieve UHC is instructive here. In Netherlands, health insurance is mandatory, and the standard benefits package includes primary care delivered by general practitioners (Faber et al 2012). All Dutch residents need to register with a (usually local) general practice (GP) which they can choose (and change if needed). The GP is the gatekeeper to all hospital and specialist care and access to higher levels of care (except emergencies) must be initiated and coordinated by the GP. While there is some

co-payment for specialist care, GP visits attract no co-payments. In practice this means that more than 90% of all new health problems presenting at primary care level are managed at that level. The service integration across levels of care, and the broader financial integration are such that they enable the efficient deployment of financial and human resources across the health system through supporting the return of patients from higher centres back to GPs; they also support delegation of tasks within GP practices from physicians to practice nurses. Thailand is also moving towards such a model, emphasizing that. "primary care needs to move from its traditional role of providing basic disease-based care, to being the first point of contact in an integrated, coordinated, community-oriented and person-focused care system" (Sumriddetchkajorn et al. 2019).

How might one approach the challenge of integrated care in India? While a detailed response to this question is a separate paper by itself, we contend that India requires to formulate a contextualised, framework for the provision of integrated, coordinated, and responsive services, perhaps involving an initial process of experimentation and learning, given the limited experience with such models. The integration and coordination being about: the financing of services, and the delivery of services across all levels of care. An initiative that can operate at scale and can thus serve as a living learning lab which yields macro (policy and design), meso (institutional and managerial arrangements) and micro level (implementation and service provision) insights on what will work, for whom, how, and why, is required at this stage, rather than wholesale reforms whose outcomes may be hard to predict. While some of the state schemes discussed earlier could play this role, the countrywide ESIS is perhaps optimally placed to serve this function (Prasad and Ghosh 2020). While the ESIS has its issues too, it has all the features and building blocks for an integrated system to be initiated and kickstarted quickly – and is well placed to overcome the key bottleneck of fragmented care provision (Niti Aayog 2019). This is because it functions at a large enough scale, being the largest contributory risk pooling system in India, covering more than 100 million workers and their dependents with an existing mandate to provide health insurance coverage to all formal sector workers (earning less than INR 21,000 (US$300) per month) and their dependents. The ESIS provides coverage through funding a network of dispensaries (primary care level providers) and hospitals. One possible extension of its responsibilities could involve ESIS expanding its coverage to include the informal non-poor in a contributory health insurance, although this would first need strengthening ESIS functioning in health service delivery (Niti Aayog 2019). ESIS's recent opening of its hospitals and services to PM-JAY beneficiaries, and (implicitly) raising the opportunity to include the non-poor in the informal sector, presents a timely opportunity to attempt a potentially insightful natural policy experiment.

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NCAER India Centre, 11, Indraprastha Estate, New Delhi 110002. INDIA.
Tel: +91-11-2345 2698, 6120 2698 info@ncaer.org www.ncaer.org

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