

Early experiences of Pradhan Mantri Jan Arogya Yojana (PM-JAY) in India: a narrative review

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health financing, universal health coverage, insurance, PM-JAY, India

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ACRONYMS

	Aspirational Districts Programme
	auxiliary nurse midwife
	accredited social health activist
BPL	
CGHS	Central Government Health Scheme
CPHC	comprehensive primary health care
DALY	disability-adjusted life year
ESIS	Employees' State Insurance Scheme
FY	fiscal year
GDP	gross domestic product
GHE	government health expenditure
Gol	Government of India
HBP	Health Benefit Packages
HH	
	health and wellness center
	information, education, and communication
	lower-middle-income country
	maternal and child health
	Ministry of Health and Family Welfare
	National Accreditation Board for Hospitals and Healthcare Providers
	non-communicable disease
	National Health Authority
	National Health Mission
	National Health Policy
	National Rural Health Mission
	National Urban Health Mission
	official development assistance
	Organization for Economic Co-operation and Development
	out-of-pocket expenditure
	publicly funded health insurance
	Pradhan Mantri Jan Arogya Yojana
	purchasing power parity
	reproductive, maternal, newborn, and child health
	reproductive, maternal, newborn, and child healthreproductive, maternal, newborn, child, and adolescent health
Rs	
	Rashtriya Swasthya Bima Yojana
	Socio-Economic Caste Census
	total health expenditure
	universal health coverage
US\$	
UT	union territory

EXECUTIVE SUMMARY

India is a lower-middle-income country (LMIC) with 21% of its population living below the international poverty line. Yet, its government health expenditure in 2016 was only 1.17% of its gross domestic product (GDP), a share that is even lower than the average for low-income countries. India also faces a shift in disease burden, with non-communicable diseases (NCDs) emerging as top causes of mortality while infectious diseases and maternal, neonatal, and nutritional health remain areas of concern. To address these challenges and improve healthcare access and affordability for poor and vulnerable populations, India launched Pradhan Mantri Jan Arogya Yojana (PM-JAY) in 2018 as a successor to the Rashtriya Swasthya Bima Yojana (RSBY) scheme. To further inform policy development, we synthesized the early experiences of PM-JAY by conducting a narrative review, focusing on the three dimensions of universal health coverage (UHC): population coverage, service coverage, and financial risk protection.

PM-JAY offers enrolled families an annual insurance cover of up to Rs500,000 (US\$6,670) for secondary and tertiary health services. The scheme covers pre- and post-hospitalization expenses, as well as all pre-existing diseases with no cap on family size, age, or gender. Beneficiaries may avail benefits at any empaneled hospital across India. PM-JAY opens an important policy window for UHC in India by building upon RSBY's beneficiary base and insurance ceiling.

The magnitude of the scheme redefines the government's commitment to public health, but the scheme has not effectively improved access to care and financial risk protection and there is disparity between the states. The fragmentation of India's health governance means that PM-JAY—while a national program—is fully implemented by the states. Stark disparities in health infrastructure, PM-JAY enrollment, and hospital empanelment across state borders have led to varied service utilization. In turn, the residents of poorer states are the ones benefitting least from the scheme. In addition, PM-JAY still does not cover outpatient expenses, which make up most of India's out-of-pocket expenditure (OOPE) on health. Lastly, the high service output of the unregulated private sector raises concerns about the quality of care and adherence to billing protocols.

To address the existing challenges, we propose extending the benefits package to outpatient care, supporting health technology assessment, enforcing national standards for hospitals, and ramping up the government's role in capacity-building.

1 INTRODUCTION

India is an LMIC with over 1.36 billion people and a GDP per capita of US\$2,104.^{1–3} In 2011, 21% of the population was living below the international poverty line, the highest rate in South Asia.⁴ However, India has made remarkable strides in addressing the needs of its poorer population since the early 2000s.⁵

From 1990 to 2016, the country experienced an epidemiological transition, in which the burden of disease from communicable, maternal, neonatal, and nutritional disorders fell from 61% to 33%, but the burden of NCDs increased from 30% to 55%. Neonatal disorders remain the leading cause of disability-adjusted life years and premature death—a crisis exacerbated by disparities in reproductive, maternal, newborn, and child health (RMNCH) coverage across wealth quintiles and the rural-urban divide. Accompanying India's epidemiological shift is urbanization. From 2001 to 2011, the urban population grew by 32%, and in 2011, the slum population accounted for 17% of all urban households (HHs). P,10 Overall, the number of slum HHs increased by 37% just within one decade. The urban poor are particularly vulnerable to under-five mortality, respiratory illness, and vector-borne diseases due to limited safe water, sanitation, and health care. More on India's socioeconomic and epidemiological profiles can be found in Box 1 in the Appendix.

While evolving disease burden and urbanization have led to an increasing demand for medical services, health financing continues to stagnate in India. The country's total health expenditure (THE) during 2016-2017 was estimated to be 3.8% of its GDP, and OOPE was 58.7% of THE. ^{13,14} The 2016 government health expenditure (GHE) was only 1.17% of the GDP, a share that is even lower than the average for low-income countries (1.57%). A historically low GHE and high OOPE combine to create a lack of financial risk protection, i.e., high rates of catastrophic and impoverishing health spending. In 2011, 17.3% of India's HHs spent more than 10% of their total HH budget on health, and 4.2% were pushed below the poverty line of 2011 PPP\$1.90. ¹⁴ In 2014, borrowing was the major source of financing of hospitalization for 24.9% of rural HHs and 18.2% of urban HHs. ⁶ For urban HHs, the percentage varied from 13.7% in the top wealth quintile to 21.9% and 21.7% in the two poorest quintiles. ^{15,16} For more on health financing, please refer to Figure 10 and Box 2 in the Appendix.

The decentralization of health governance has imposed barriers on service coordination across the country. The Ministry of Health and Family Welfare (MoHFW) is tasked with overall decision-making in health policy, and service delivery lies in the hands of the states. ¹⁷ Because states are given the freedom to run their own health systems, implementation differs across the country. This decentralization has led to fragmented service delivery models and insurance schemes—even those spearheaded by the government—and in turn, variations in coverage and health outcomes across the country. Looking at India overall, 63% of the total population was not covered under any health insurance during 2017-2018. ⁶ Of those with coverage, 78% were covered through public insurance companies mostly affiliated with government health schemes. The barriers of decentralization are also evident throughout the country's long history of federal health programs, such as the National AIDS Control Programme or the National Rural Health Mission (Figure 1). More details on health governance can be found in Figure 11 and Box 3 in the Appendix.

2003: NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME

2013: NATIONAL URBAN HEALTH MISSION

1992: NATIONAL AIDS CONTROL PROGRAM

2008: RASHTRIYA SWASTHYA BIMA YOJANA

2010: PROGRAMME FOR PREVENTION & CONTROL OF CANCER, DIABETES, CARDIOVASCULAR DISEASES & STROKE

2018: AYUSHMAN BHARAT

2005: NATIONAL RURAL HEALTH MISSION

Figure 1. History of national health programs in India

Source: summarized from National Health Profile (2019)⁶

India's service delivery is divided between urban and rural regions, as well as private and public sectors, a system that has failed to respond to urbanization and the shift in disease burden. Rural areas lag behind their urban counterparts with respect to RMNCH services.⁸ Although the number of rural subcenters (SC), primary health centers (PHC), and community health centers (CHC) has increased, these numbers still fall short of Indian Public Health Standards by 23%, 28%, and 37%, respectively.¹⁸ There are also staffing deficits at all three tiers, the largest ones being physicians (the numbers fall short of these standards by 87%), surgeons (86%), and pediatricians (80%) at CHCs.

Meanwhile, urban areas continue to suffer from a lack of defined infrastructure. As of July 1, 2019, there was a 44% shortfall of urban primary health centers (U-PHCs). Workforce shortages are widespread, with a major shortage of lab technicians (51%) at U-PHCs and radiographers (48%) at urban community health centers (U-CHCs). Cities are concentrated with private practices that deliver secondary and tertiary services. Underprioritizing primary services centering on disease prevention and lifestyle monitoring, means that patients may forgo care and in the long term, present with an increase of advanced health conditions that warrant higher-cost treatment. More on service delivery can be found in Box 4 and Table 5 in the Appendix.

Today, close to 90% of India's hospitals are private.¹⁷ This dominance is also reflected in service utilization: in 2014, private facilities provided 58% and 68% of inpatient treatments in rural and urban areas, respectively.²⁰ The split was even more pronounced for outpatient care, where the corresponding figures were 71% (rural) and 79% (urban).²¹ Because private practice has such high service output and governance is so fragmented, health data may not be well-integrated between the two sectors. This lack of communication across the public-private boundary makes it difficult to gauge the performance of the health system as a whole. Finally, as of 2015, 16 of the 29 states had no legislation requiring private facilities to hold a license.²⁰ Much of the private sector is therefore not held accountable, leading to low quality coverage, high OOPE, and financial manipulation of patients.

The Government of India (GoI) has made efforts to reduce the financial burden of health care and achieve UHC by establishing different insurance schemes. However, these schemes **only benefit certain groups and heavily fragment India's risk pool**. Since the 1950s, the Employees' State Insurance Scheme (ESIS) and Central Government Health Scheme (CGHS) have covered a wide range of services—both in- and outpatient—for enrollees and their families.^{22,23} However, the ESIS and CGHS only serve HHs in the formal sector and rely on contributions from beneficiaries (Table 1). In 2008, the country took a major step toward

UHC through the publicly funded RSBY. While the scheme was ambitious in scale, it did not pan out as envisioned (for a more in-depth explanation, please refer to Box 5 in the Appendix). In terms of population coverage, RSBY had a cap of five members per family and even after five years of implementation had enrollment rates of less than 50% in most districts. As for service coverage, the annual maximum reimbursement of Rs30,000 (US\$400) per HH was low, and outpatient care was not covered. Evidence shows that RSBY failed to significantly reduce the financial burden for poor HHs. Its empanelment process did not screen facilities for any certification and was less accessible to rural hospitals. Worse still, RSBY was criticized for triggering supplier-induced demand and profit-driven behaviors in the private sector.

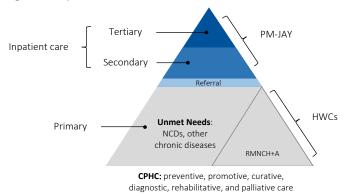
Table 1: Major insurance schemes in India

	Employees' State Insurance Scheme (1952 - present)	Central Government Health Scheme (1954 - present)	Rashtriya Swasthya Bima Yojana (2008 - 2018)
Funded	by employers, employees, states	by center with subscription fees (Rs250-1,000) from members	by center and states; Rs30 fee to register
Eligibility	employees with monthly salary of Rs21,000/- (25,000/- if disabled); covers their families As of Mar 31, 2019, 147.5 million beneficiaries across 34 states and UTs (10.8% of India's 2019 population)	employees and retirees of central government; covers their families As of late 2019, 3.6 million beneficiaries across 71 cities (0.3% of India's 2019 population)	BPL families (up to five members within each) ► As of 2016, 40 million families enrolled across 29 states and UTs
Package	in/outpatient, family welfare and MCH, dispensary, domiciliary, specialist consultation, imaging, lab, transport, certification services	in/outpatient, family welfare and MCH, dispensary, domiciliary, specialist consultation, X-ray, lab, health education services	annual, portable cover of Rs30,000 (US\$400) per family, for inpatient services, all pre-existing diseases, transportation allowance (up to Rs100 per visit, Rs1,000 total), excludes outpatient care

Source: adapted from National Health Profile⁶, Commonwealth Fund¹⁷, Ministry of Labour & Employment²³, Ministry of Health & Family Welfare²⁴, National Portal of India²⁵, and total population statistic from World Bank¹

The National Health Policy (NHP) of 2017 set a GHE target of 2.5% of the GDP by 2025.²² Beyond that, the NHP 2017 argues for health care as a human right, a core tenet underlying UHC. To address the unfinished agenda of RSBY, the Gol launched Ayushman Bharat on September 23, 2018. Its approach is two-pronged: 1) by 2022, transition 150,000 SCs and PHCs to health and wellness centers (HWCs), which will provide comprehensive primary health care; and 2) through Pradhan Mantri Jan Arogya Yojana (PM-JAY), offer greater financial risk protection for secondary and tertiary services (Figure 2).²⁹ PM-JAY is a publicly funded health insurance (PFHI) scheme that aims to cover India's poor and vulnerable populations. It expands upon the beneficiary base and annual maximum reimbursement of RSBY but like its predecessor, weighs inpatient care most heavily.

Figure 2. Ayushman Bharat



Source: adapted from Lahariya C (2018), ²⁹ Figure 1; p. 497.

In this review, we aimed to synthesize the early experiences of PM-JAY with a focus on its population coverage, service coverage, and financial risk protection. We wanted to identify progress and challenges in policy design and implementation to inform further policy development.

2 METHODS

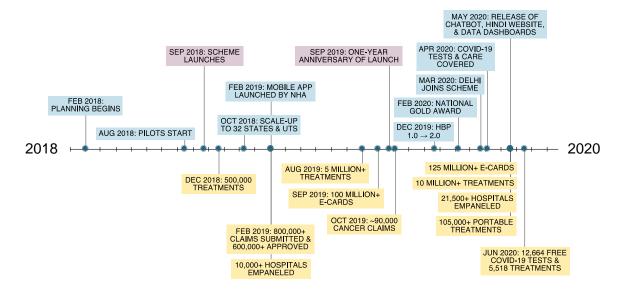
This study evaluated PM-JAY according to the three dimensions of UHC: 1) population coverage (who qualifies and is enrolled?), 2) service coverage (what benefits are in the package?), and 3) financial risk protection (does the scheme effectively prevent financial hardship from health costs?). We started by conducting a narrative review of academic journal articles. We identified these articles by searching Google Scholar and PubMed Central with the following key terms: "pradhan mantri jan arogya yojana"; "pmjay"; "pmjay claim"; "ayushman bharat"; "utilization"; "reimbursement"; and "coverage." Articles on policy design, implementation, insurance coverage, benefit packages, service use, and financial risk protection were included, while those describing protocols and specific health crises were excluded. Gray literature and government channels were also reviewed. Finally, we extracted data from the official PM-JAY website (pmjay.gov.in), the websites of the Organization for Economic Co-operation and Development (OECD) and the World Bank, and records such as the Rural Health Statistics and Quarterly National Health Mission Report. Our literature and data search concluded on February 2, 2021.

3 RESULTS

Overview

PM-JAY targets the poorest 40% of India's population, equivalent to about 107.4 million HHs.³⁰ Eligibility is based on the Socio-Economic Caste Census (SECC) of 2011. To qualify for PM-JAY, a rural HH must meet one of six deprivation criteria; an urban HH must belong to one of eleven occupational categories; or the HH must not have shelter (Table 2).³¹ Of the qualifying HHs, 82 million are from rural areas and 23.3 million from urban areas.³² An additional 1.6 million HHs without shelter are automatically covered.^{6,32} Since RSBY was absorbed into PM-JAY, families previously covered under RSBY but not included in the SECC 2011 are also eligible.³⁰ PM-JAY is fully funded by the government with cost-sharing between the central and state governments. The center:state distributions vary, with ratios of 100:0 for union territories (UTs) without legislatures; 90:10 for North-Eastern states and three Himalayan states; and 60:40 for the remainder.³⁰ For the 2018-2019 fiscal year (FY), Rs24 billion (US\$321 million) was allocated for PM-JAY, nearly five times the FY 2017-2018 budget for RSBY.³³ The GoI allocation for FY 2020-2021 is Rs64 billion (US\$855 million).

Figure 3. PM-JAY implementation timeline



Source: taken from policy documents

Note: Hospital Empanelment Module (HEM) allows facilities to be empaneled more rapidly.

PM-JAY offers health insurance coverage with a maximum reimbursement of Rs500,000 (US\$6,670) per family per year, nearly 17 times that of RSBY.³⁰ The scheme is portable, meaning that enrollees may avail benefits at any empaneled hospital across India, regardless of their home state. It covers all pre-existing diseases, as well as three days of pre-hospitalization and 15 days of post-hospitalization expenses, including medicine, follow-ups, consultations, and diagnostics. While the scheme emphasizes secondary and tertiary care, it excludes all outpatient, drug rehabilitation, cosmetic, organ transplant, and fertility services.³²

Other than a one-time Rs30 payment for an e-card, beneficiaries pay no fees at the point of service: all covered care is delivered free-of-charge.³⁰ The eligibility and identity of beneficiaries need to be verified when they use the inpatient services covered by PM-JAY.³² The hospital selects a package that will cover

the procedure, then files the claim with evidence to justify the service. Once the claim is processed and settled, the hospital is reimbursed according to package rate guidelines.

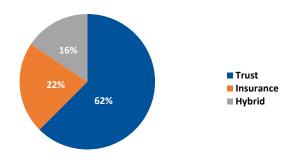
Table 2. SECC criteria for PM-JAY eligibility

Rural HHs	Urban HHs	HHs without shelter
 Only 1 room with kucha walls/roof No adult between age 16-59 HHs headed by female with no adult male between age 16-59 Disabled member and no able-bodied adult Scheduled caste/scheduled tribe Owns no land, most of income from manual casual labor 	 Rag picker Beggar Domestic worker Service provider working on streets Headload worker (e.g., welder) Sanitation worker Home-based worker (e.g., artisan) Transport worker Shop worker, delivery, waiter, etc. Electrician, mechanic, etc. Washer-man/chowkidar 	 Destitute/living on alms Manual scavenger families Primitive tribal groups Legally released bonded labor

As of November 2019, some states (e.g., Tamil Nadu, Gujarat) have been reimbursed less than their claimed amounts while others (e.g., Maharashtra, Assam) have received an excess of funds from the central government.³³ As of November 20, 2019, more than 80% of claims were paid in 11 states and UTs. Tamil Nadu led with 94% of claims paid whereas Goa trailed behind with less than 1%.

In January 2019, the GoI formed the National Health Authority (NHA) to lead PM-JAY at the national level.³⁰ States are responsible for PM-JAY implementation, which includes everything from enrolling beneficiaries with their own databases and specifying benefit packages, to choosing a mode of operation (Table 3). As of September 23, 2020, 20 states are running trust models, 7 insurance, and 5 hybrid (Figure 4).³⁴ A study of PFHI schemes in three Southern states found opting for a trust reduces administrative costs but may push private hospitals to band together and monopolize.³⁵ While insurance models come with higher operational costs, they create a more pronounced purchaser-provider split, believed to stimulate competition and efficiency. The study found that neither model improved financial risk protection. A more recent assessment of PM-JAY implementation in two states showed stricter hospital empanelment and claim approval for the trust model, but a higher proportion of pre-authorizations and processed claims with the insurance model.³⁶ In both studies, generalizability is limited due to small sample sizes.

Figure 4. Mode of state-wise implementation (September 23, 2020)



Source: PM-JAY Annual Report (2019-2020), National Health Authority.³⁴

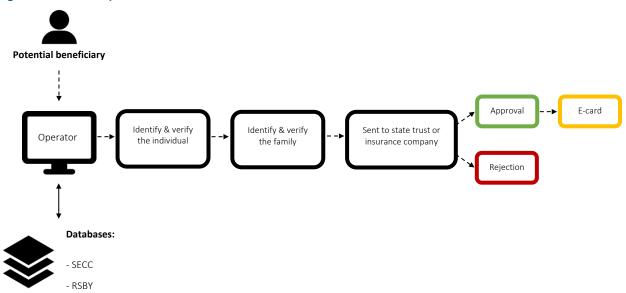
Table 3. PM-JAY implementation models

Trust	Insurance	Hybrid
A state-funded and -owned body empanels and reimburses hospitals.	The state pays the company a fixed premium for each HH enrolled. The company empanels and reimburses hospitals.	A mix of trust and insurance models.

Population coverage

State governments are free to register beneficiaries using their own databases but must cover SECC-eligible HHs.³⁰ Beneficiary identification is channeled through a workflow of database searches, multi-stage verification, and approval by the trust or insurer.^{30,31} The Beneficiary Identification System was established to streamline this layered process (Figure 5). States and UTs are tasked with information, education, and communication (IEC) to raise awareness of PM-JAY.³¹ IEC ranges from posting beneficiary lists at community service centers, PHCs, and hospitals, to mass media initiatives. The GoI enlisted accredited social health activists (ASHAs) to deliver letters to beneficiaries and has set up a website, app, and toll-free helpline exclusively for PM-JAY.

Figure 5. Beneficiary identification workflow



Source: adapted from Mantra Softech,³⁷ Figure 1.

Unlike RSBY, PM-JAY places no cap on family size, nor are there restrictions on age or gender. The scheme seeks to cover not just below poverty line (BPL) populations, but the vulnerable as well. While the SECC criteria are strongly associated with state poverty headcounts, there are some inconsistencies. For instance, Meghalaya has a poverty headcount of 12% and SECC eligibility of over 62%. With a 30% poverty rate, sees much lower SECC eligibility: 38%. These mismatches show the limitations of the SECC as a ruling standard and justify re-evaluation of eligibility criteria. Another area of concern is the underidentification of beneficiaries in states that had not managed their own insurance schemes before PM-JAY. For all of these states, verification rates sit below 35% of SECC-eligible beneficiaries. Uttar Pradesh, Bihar, and Arunachal Pradesh have the lowest verification percentages—around 6%, 4%, and 0%, respectively—despite their high poverty headcounts. Lastly, while some states have maximized insurance coverage by

establishing their own schemes and merging them with PM-JAY, others have not. Therefore, general coverage varies significantly across the country (Figure 6).

The NHA has laid out guidelines and hosted information campaigns to empower beneficiaries with knowledge of PM-JAY. For example, the outreach initiative "Ayushman Bharat Diwas" covered 300,000 villages across India. 30 Call center human resources expanded from 37 executives to over 600, and in May 2020 came the release of a WhatsApp chatbot and Hindi website for PM-JAY. 30,32 More than 125 million PM-JAY and state cards have been issued.³² As of September 6, 2020, the call center has answered 6.4 million clients, the PM-JAY website has drawn over 20 million users, and the flagship app has been downloaded 2 million times.³⁴ But even amidst these strong efforts to educate HHs about the scheme, there are still low levels of awareness in some states. A survey of 2,700 eligible HHs across Bihar, Haryana, and Tamil Nadu showed that 10%, 12%, and 59% were aware of PM-JAY, respectively. 39 Of the HHs that were aware, 14% (Bihar), 66% (Haryana), and 83% (Tamil Nadu) knew details on beneficiary identification. For Bihar and Haryana, awareness was lower in rural areas than in the cities. While the PM-JAY letters distributed by ASHAs were the primary source of awareness, many HHs had not even opened the letter, and many did not know which hospitals were empaneled. Lack of awareness is not an issue unique to the beneficiary; at an empaneled hospital in Uttarakhand, medical residents and faculty scored poorly on assessments of PM-JAY awareness and readiness.⁴⁰ Another barrier to access is the Rs30 fee for an e-card, which is necessary to avail services under PM-JAY.

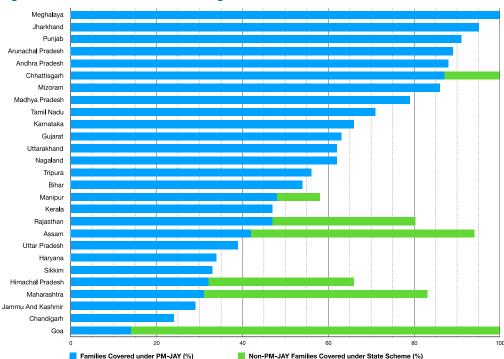


Figure 6. Distribution of health coverage

Source: National Health Authority, February 3, 2020.³² Not available for Andaman & Nicobar Islands, Dadra & Nagar Haveli and Daman & Diu, Ladakh, Lakshadweep, Puducherry (excluded). Rajasthan last updated its data on October 31, 2019.

Service coverage

The MoHFW deployed committees of stakeholders, clinical specialists, and non-medical experts to design benefit packages over the course of a year. The original Health Benefit Packages (HBP 1.0) spanned 1,393 procedures but were adjusted one year into the scheme. The revised packages (HBP 2.0) cover 1,573 procedures and retain all specialties from HBP 1.0. These packages are largely recommendations by the NHA, meaning that states may 1) transition from HBP 1.0 to 2.0 when convenient, 2) add their own packages with NHA approval, 3) modify package rates, and 4) reserve certain packages for public hospitals. As a result, there is considerable variation in HBP and package rates across state borders. As of September 2020, 18 states and UTs have adopted HBP 2.0. Turthermore, both HBP 1.0 and 2.0 offer incentives in the form of augmented package rates. To illustrate, a hospital in an Aspirational district—one of 115 districts marked by the GoI as most deserving of socioeconomic support—would receive a bonus payment in addition to the base package rate.

Despite PM-JAY providing a relatively comprehensive health package, beneficiaries must avail the services at empaneled facilities. However, the scheme is portable, meaning that beneficiaries may access care at any empaneled hospital in the country, regardless of their state of residency. Almost 25,000 hospitals are in PM-JAY-network as of December 10, 2020.³² Alongside PM-JAY coverage, HWCs provide the comprehensive primary health care necessary to address India's growing NCD burden. As of March 31, 2019, 5% of rural SCs and 3% of urban SCs had been converted into HWCs.¹⁸ 33% of rural PHCs and 33% of U-PHCs had made the transition. As of December 12, 2020, there were 51,539 functioning HWCs across India; operationalization of the HWCs is divided into five phases to meet the December 2022 target of 150,000.⁴³

Within just one year of launch, PM-JAY covered 4.65 million admissions, and 18,236 hospitals were empaneled.³⁰ As of December 10, 2020, there had been over 14.5 million admissions under the scheme, with a monetary treatment value of over Rs155 billion (US\$2.1 billion).^{32,34} Over 125,000 portable treatments have been availed, suggesting that PM-JAY has bridged gaps for populations who previously, could not access suitable care locally.³⁴ For instance, of the 10 million admissions from the scheme's launch to May 2020, 80% were from rural areas.⁴⁴ From September 23, 2018, to November 30, 2019, the 7-day and 30-day readmission rates under PM-JAY were 2.2% and 5.1%, respectively, and 0.58% of patients died during hospitalization.⁴⁵ However, readmission rates vary significantly across states. For example, Arunachal Pradesh has 7-day and 30-day readmission rates of 0.8% and 1.3%, respectively, while Kerala's are 5.8% and 11.3%.

Beneficiary feedback has generally been positive: of 602,094 phone calls with beneficiaries from April 2019 to March 2020, 95% described their experience as "very good" or "good."⁴⁶ Out of the same pool, 95% did not pay anything, and 98% received help from Pradhan Mantri Arogya Mitra staff. From November 2019 to March 2020, 368,726 beneficiaries were called 15 days after discharge, of whom 91% stated that they were "feeling better." However, these phone surveys only include people who successfully availed care and are thus prone to selection bias.

The HWC arm of Ayushman Bharat is designed to fill the need for comprehensive primary health care, but rollout of these facilities has been slow. As of September 17, 2019, only 21,000 were up-and-running even though 52,744 had been approved.⁴⁷ The empanelment and public-private distribution of hospitals are highly variable across states and districts (Figure 7 and Figure 8). Specifically, states with higher poverty rates and disease burdens see slightly less empanelment of both public and private hospitals (per 100,000 eligible individuals).³⁸ A similar trend is observed in Aspirational districts, where empaneled hospitals are smaller in bed capacity, significantly less specialized, and not as likely to be accredited.⁴⁸ Private hospitals

have carved out an important role in service delivery, as they tend to offer the specialized services and facilities (e.g., operating theater, blood bank) that the public sector does not provide. However, over 72% of private hospitals empaneled under PM-JAY are located in just seven states.⁴⁹ The states that implemented health insurance programs prior to PM-JAY make up over 80% of the total claim value. Regardless of empanelment numbers, certification by the National Accreditation Board for Hospitals and Healthcare Providers (NABH) is limited across all states (Figure 7).

3,500 3,000 80 2,500 Empaneled Hospitals (#) NABH-Accredited (%) 2,000 50 1,500 40 30 1,000 20 500 10 Empaneled Hospitals (#) Empaneled Hospitals with NABH Accreditation (%)

Figure 7. Hospital empanelment and certification by the National Accreditation Board for Hospitals and Healthcare Providers (NABH)

Source: National Health Authority, February 3, 2020.³² Rajasthan last updated its data on October 31, 2019.

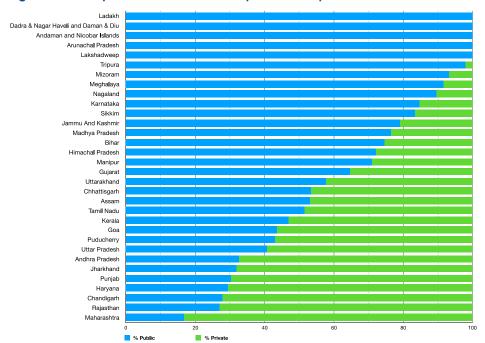


Figure 8. Public-private distribution of empaneled hospitals

Source: National Health Authority, February 3, 2020.³² Rajasthan last updated its data on October 31, 2019.

Service use under PM-JAY is uneven across states (Figure 9). With few exceptions, states with higher poverty headcounts yielded lower claim volumes.³⁸ Ten states reported no private hospital admissions in their Aspirational districts, and for all states but one, mean claim size was smaller in these districts.⁴⁸ Such trends in utilization are not only tied to the inequitable distribution of empaneled facilities, but may also indicate social norms that discourage individuals from seeking care in the first place. Furthermore, a survey of 938 patients who used PM-JAY's portable benefits showed that over 70% named "lack of required facilities in home state" as their reason for seeking care elsewhere, and 20% cited "out-of-state referral." Of these same patients, 37% did not attend follow-ups, and 38% sought follow-ups outside of their home state. These instances all point to a pattern of resource concentrations and deficits across the country. State- and district-level disparities may be symptomatic of deeper-rooted issues: 1) a chronic lack of investment in health care that widens the gap between resources and outcomes, 2) poorer states disincentivizing health sector development, and 3) not enough involvement by the government.^{38,48}

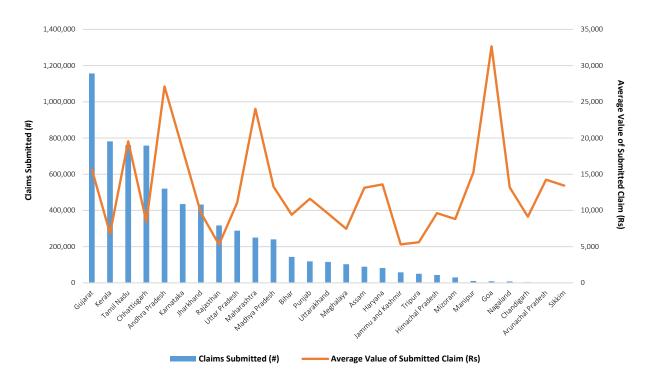


Figure 9. Total number and average value of submitted PM-JAY claims

Source: National Health Authority, February 3, 2020.³² Not available for Andaman & Nicobar Islands, Dadra & Nagar Haveli and Daman & Diu, Ladakh, Lakshadweep, Puducherry. Average claim size was calculated using count and value data. Rajasthan last updated its data on October 31, 2019.

Financial risk protection

PM-JAY has yielded mixed results in financial risk protection. Most notably, PM-JAY does not cover outpatient services, which accounted for about 60% of India's OOPE in 2016⁵¹; generous coverage of inpatient care will not effectively relieve OOPE burden and may not be the best practice for promoting preventive care.

Still, high-value (> Rs30,000 or US\$400) and very-high-value (> Rs100,000 or US\$1,340) claims make up 32% and 9% of PM-JAY claim payout, respectively. ⁵² This suggests that the scheme has enabled access to services that would otherwise be OOPE or catastrophic health expenditures. Nonetheless, high-value claim incidence is skewed toward states with more experience operating health insurance schemes.

Further, an in-depth study of Chhattisgarh, a strong leader in PFHI implementation, indicates a recurring lack of financial risk protection. Sa 87% of its population is covered under PM-JAY, and the remaining 13% by the state scheme. Regardless, incidence of CHE25 (health expenditures being at least 25% of a HH's annual expenditure) was similar between PM-JAY enrollees and non-enrollees. All analyses found no association between the size of OOPE and PM-JAY enrollment. Potential explanations for the lack of financial risk protection are 1) provider capture, where practitioners deliver unnecessary and expensive services to collect more fees; and 2) double-billing, which involves submitting an insurance claim while illegally charging a copayment, or directing patients to purchase drugs from an outside source.

4 DISCUSSION

With a target of over 500 million beneficiaries—hovering around the combined populations of Canada, the United States, and Mexico—**PM-JAY opens an important policy window for UHC in India**. It resembles RSBY in a few ways: no age or gender caps and full subsidization by the government. However, our analysis suggests that PM-JAY significantly builds upon RSBY. The annual maximum reimbursement is much higher, and no longer is there a limit on how many members of a HH can register. The GoI has mobilized ASHAs, hosted data collection drives, and published websites to spread awareness of the scheme, rather than rely on third parties to take the initiative. Beneficiaries have reported high levels of satisfaction, and the volume of high-value claims under PM-JAY indicates a positive impact on access and use of services. Finally, the live dashboards on the PM-JAY portal hold hospitals and the GoI more accountable by increasing transparency. Even amidst significant progress, the scheme has shown gaps among states and UTs due to their different capacities. In light of these gaps, it is more crucial now than ever to identify policy recommendations that will help steer the scheme into a more equitable direction.

Population coverage

Currently, PM-JAY does not reach a large segment of its desired beneficiary base due to overly strict eligibility requirements and low enrollment. PM-JAY directly uses the SECC to determine its beneficiaries. However, the SECC criteria may not be the most inclusive, thus leaving behind some of the target population. For example, HHs that do not fulfill the criteria are excluded, even if they are poor. This coverage gap calls for a deeper dive into why states with poorer populations enroll fewer beneficiaries, even if they are entitled to PM-JAY benefits. For instance, less-endowed states often do not have the database technology and manpower needed to seek out and verify beneficiaries. Some districts have reported that their workforces are spread too thin, and beneficiaries were given either sparse information about PM-JAY, or none at all.³⁹ Enrolling beneficiaries can take several hours, and the Rs30 fee for each e-card is another barrier to entry.

To maximize coverage of the target population, BPL HHs—no matter their SECC-eligibility—should be absorbed into the scheme. There must be more engagement at the community level to raise awareness of PM-JAY, whether through village officials, toolkits translated to local dialects, or youth camps.³⁹ Educational materials should be more comprehensive, with lists of the services covered and nearby hospitals empaneled. Increasing social media presence may fill the human resource deficit. E-cards should be free and registration, automatic by integrating identification methods such as Aadhaar and ration cards. Lastly, in the spirit of UHC, states with subpar insurance coverage levels should explore scheme expansion, which has been undertaken before by Tamil Nadu and Karnataka during the RSBY-era.³⁵

Service coverage

Although the NHA defines a baseline benefits package for all PM-JAY beneficiaries, service delivery is only efficient if the individual states are equipped with adequate health infrastructure. Unfortunately, shortfalls and inequities exist beyond beneficiary enrollment. Poorer states have lower purchasing power, which can deter private sector development, hospital empanelment, and even retention of health personnel. Regardless of PM-JAY's portability, this prevents populations from accessing care altogether and may reinforce a sense of learned helplessness—why bother seeking health services that do not exist?

NHA guidelines on HBP are not binding, and even before HBP 2.0 was introduced, the number of packages ranged from 1,393 to 3,707.³² Some states set aside very few HBP for their public hospitals (e.g., 3 out of 1,409 in Dadra & Nagar Haveli and Daman & Diu) while others were much less conservative (e.g., 1,064 out of 1,634 in Goa). **Overall, the lack of evidence-based decision-making may result in the overuse of inpatient services and wasted resources.**

In January 2018, the GoI founded the Aspirational Districts Programme (ADP). The ADP serves to stimulate the performance of 115 specified districts by actively measuring their progress across 49 indicators. A PM-JAY-focused program similar to the ADP could address the state-wise disparities in enrollment, health infrastructure, and service utilization. In May 2020, the NHA released dashboards with real-time, disaggregated data on PM-JAY utilization and hospital performance. The proposed intervention can harness this data to formulate a "PM-JAY preparedness factor" and rank states accordingly. Quantifying progress will allow state governments to match constantly changing needs. The GoI should support this initiative by committing to health technology assessment (HTA), which has proven formative in countries with UHC including Thailand and the United Kingdom. HTA can guide policy decisions on what services should be covered in the HBP, or what biomedical technologies can improve health outcomes. India's own HTA agency is still in its early stages of development, so it is important for the GoI to invest in the agency and keep learning from more veteran users of HTA across the globe. Integrating the public and private sector's information technology platforms and national health databases will support these efforts.

Financial risk protection

As for financial risk protection, PM-JAY—just like RSBY—does not cover outpatient expenses despite their majority share in India's OOPE. India should consider piloting an expansion of coverage to outpatient services. China's experiences with its New Cooperative Medical Scheme (NCMS) may guide this potential change in policy. Early on, research suggested that NCMS's inpatient-only coverage resulted in a high OOPE, prompting the government to subsidize outpatient expenses six years after launch. 57 However, beneficiaries' financial burden is still unresolved due to the low reimbursement rate for outpatient care. Thailand's Universal Coverage Scheme stands as another case study reaffirming the advantages of a comprehensive benefits package. From 2002, all Thai citizens have been entitled to two packages: 1) treatment and care, and 2) health promotion and disease prevention. 58 Between the two, all in- and outpatient services are covered (with very few exclusions), and so are essential medicines and NCD interventions. After rollout of the scheme, utilization of in- and outpatient care rose steadily, diminishing unmet health care needs to OECD levels by 2010. Impoverishing spending dropped from 120 (per 1,000 HHs) in 2002, to 40 in 2009. Thailand was an LMIC at the time of UHC rollout, so its achievements especially resonate with India and PM-JAY. In tandem with HBP expansion, the GoI can expedite the operationalization of HWCs, which will eventually provide outpatient care for minor illnesses, to offset the OOPE burden.⁴³

As of September 22, 2019, 53% of empaneled hospitals were private, and the same percentage of PM-JAY admissions were in private hospitals.³⁰ While the distribution is balanced in those regards, private hospitals contributed to 62% of the total monetary value of admissions under PM-JAY. As of February 29th, 2020, the average claim amounts were Rs17,260 (US\$234) and Rs9,869 (US\$134) in private and public hospitals, respectively.⁴⁹ Although private hospitals generally address more complex medical cases, their higher claim values may indicate unscrupulous practices such as provider capture and double-billing.

Audits have found private hospitals more likely to cut costs by discharging patients too early and committing fraud.⁴⁹ To combat this, **there must be stricter regulation by State Health Authorities and more research into provider behavior.**⁵³ As recommended by the NHP 2017, **strategic purchasing may be effective as well**: specifically, empaneling more of the public sector and reserving more HBP for government hospitals. In most states, PM-JAY claim volume for general medicine and obstetrics/gynecology packages leans strongly toward public hospitals while general surgery and several specialties (i.e., oncology, cardiology, urology) are delivered primarily by private hospitals.⁴⁹ This concentration of high-value claims in the private sector suggests that patients may prefer public hospitals for lower-value procedures.^{49,52} Strengthening public health infrastructure would empower beneficiaries with choice, encouraging competition to hold private hospitals more accountable. **Instituting standards like the NABH can help address both fraud and fragmented health governance.** Considering that 11 states and UTs have zero NABH-certified hospitals, it is essential that the GoI step in and enforce these benchmarks without exception. Further, **piloting care-driven payment models such as value-based care for physicians may reduce costs and increase service quality**.

Although PM-JAY strives to alleviate the financial burden of health care for poor and vulnerable communities, it should not end there. Ideally, the scheme should lay the groundwork for UHC in India, which has fragmented risk pools in the form of PM-JAY, ESIS, CGHS, and private insurers. The GoI might first extend benefits to those in the middle class, who may be too well-off to qualify for PM-JAY, but not well-off enough to comfortably pay expensive medical bills. Another possibility is merging PM-JAY with other insurance schemes, which may help balance out the risk pools. Recently, the NHA has partnered with the Employees' State Insurance Corporation, Ministry of Home Affairs, and Ministry of Labour and Employment to pilot PM-JAY coverage to certain populations.³⁴ In June 2020, PM-JAY benefits were extended to migrant workers, a population especially at-risk during the COVID-19 pandemic.³⁴ Although the NHA launched a multi-state radio campaign to raise awareness of this provision, the migrant population still warrants more attention moving forward. The high service utilization under PM-JAY and ongoing coverage expansion raise concerns about the sustainability of the scheme. A 2019 report projected that if PM-JAY successfully covers all target beneficiaries at the current hospitalization rate, its cost would well exceed the GoI budget allocation.⁵⁹ In fact, the estimated cost of PM-JAY would account for most of the MoHFW's budget. Especially when considering India's low GHE, the GoI may have to explore other financing modes, as full population coverage is feasible neither in the short nor long term. Another crucial consideration is the health focus of PM-JAY: since the scheme only covers inpatient care, there is more incentive to seek out secondary and tertiary services. Patients may start gravitating toward the more reactive, curative side of the health system while neglecting preventive care. To ensure that PM-JAY follows a more cost-effective approach, the GoI should strengthen the capacity of HWCs, which deliver primary care services. The central and state governments may lead evidence-based initiatives to raise demand for HWC services, for example, reinforcing the continuum of care by streamlining two-way referrals between the HWC and PM-JAY arms. 60

We attempt to summarize the implementation progress of PM-JAY, as well as identify its achievements and challenges thus far. Since PM-JAY has been in operation for just under two years, our evaluation centers on early experiences of the scheme. Current literature on PM-JAY is limited in number and conclusiveness, so most of our findings are from the official government channel. Strictly designed evaluation studies are desired to understand the impact of PM-JAY more deeply.

5 CONCLUSION AND POLICY IMPLICATIONS

PM-JAY represents the Gol's long-awaited commitment to the health of communities historically left behind. It has increased the annual maximum reimbursement for beneficiary families and removed the cap on family size. But with some states struggling to implement PM-JAY more than others, results are varied across the board. The fragmentation of India's health governance—where key decisions on service delivery are at the states' discretion—does little to bridge these gaps. PM-JAY misses the mark on the chronic issue of OOPE, both by excluding outpatient care and failing to monitor the private health sector. The central government must play a proactive role in capacity-building and regulation, not just policymaking. To improve PM-JAY on the quality and efficiency fronts, the Gol should lead more innovatively by promoting HTA, as well as piloting risk pool consolidation and HBP expansion. The central and state governments of India must venture beyond the precedents set by RSBY and recognize that PM-JAY has opened up a new policy window altogether.

Table 4. Summary of key issues and policy implications.

Dimension of UHC	Areas for improvement	Policy recommendations
Population coverage	Not all poor populations eligible	Supplement SECC criteria with BPL and migrant status, combine insurance pools
	Long wait-times for enrollment	Automate process by using Aadhaar, ration cards
	Fee required to register	Waive fee, publicize free enrollment
	Lack of awareness	Host community events, localize IEC, amplify social channels, clarify benefits and in-network hospitals
Service coverage	Resources not evenly spread out	Build capacity in poorer states via ADP-inspired initiative
	Policy decisions not backed by evidence	Support HTAIn, learn how to adapt delivery from HTA generators to decentralized network of users
	Fragmented health system	Explore role of central government in scheme implementation, streamline two-way referrals between HWC and PM-JAY facilities, integration of public and private databases
Financial risk	Outpatient care not covered	Pilot outpatient coverage, expedite HWC rollout
protection	Private sector not well-regulated	Enforce nationwide standards, strategic purchasing

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APPENDIX 1. EXTERNAL FUNDING FOR HEALTH

The GHED includes data on capital expenditures. However, these data have several limitations. First, only three years of data are available (2010, 2013, and 2016). Secondly, only in the year 2016 are capital expenditures disaggregated by source (i.e., external versus domestic). Finally, the figures available for 2016 do not remotely resemble the data found in the 2015/2016 NHA 2019 update. For example, NHA data show that donors made up more than half of the development/capital expenditures in 2015-2016 whereas according to the below table, external donors would have made up less than 10% of capital health expenditures. Therefore, we opted not to use this data point in our analysis and instead rely on NHA data for capital and THEs.

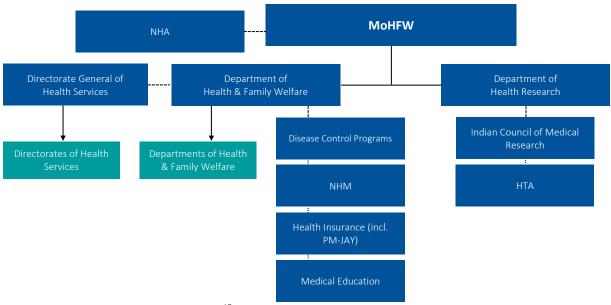
2008-2018 2018 11% ■ Global Fund 14% 24% 25% ■ International Development Association (IDA) 10% **■** United Kingdom 25% United States **17%** ■ Global Alliance for Vaccines and Immunization (GAVI) Other Sources 2% Total ODA Disbursement (2008-2018): Total ODA Disbursement (2018): constant US\$7.243 billion constant US\$421.57 million

Figure 10. India profile, external funding for health

Source: Organization for Economic Co-operation and Development, ⁶¹ calculations by authors.

• APPENDIX 2. HEALTH GOVERNANCE

Figure 11. India's health governance



Source: adapted from Gupta I, Patel N (2020). 17

APPENDIX 3. SOCIOECONOMICS AND DISEASE BURDEN

Box 1. Socioeconomics and disease burden

With over 1.36 billion people, India is the second-most-populous country in the world. In 2018, it had a GDP of US\$2.7 trillion, ranking 7th worldwide. While these metrics put the country at the international forefront, its high population translated to a GDP per capita of US\$2,010—150th of the 194 data-reporting economies in 2018. As of 2020, India is a lower-middle-income country (LMIC) per World Bank classification.

In 2011, 21.2% of the population was living below the international poverty line, the highest rate among South Asian countries.⁴ However, more current measures highlight India's achievements in poverty alleviation. The 2019 Multidimensional Poverty Index, an evaluation of 10 indicators within the spheres of health, education, and standard of living, shows that India has made great strides in addressing the needs of its poorer population since the early 2000s.⁶³ Specifically, the country saw a 27.2% reduction in the Multidimensional Poverty Index from 2006 to 2016, a figure that corresponds to 271 million people.⁵

From 1990 to 2016, the country experienced an epidemiological transition, in which the burden of disease from communicable, maternal, neonatal, and nutritional disorders fell from 61% to 33%, but the burden of non-communicable diseases (NCDs) increased from 30% to 55%. The top three causes of death are ischemic heart disease (IHD), chronic obstructive pulmonary disease (COPD), and stroke, all of which are NCDs. From 2007 to 2017, deaths due to IHD, COPD, and stroke have increased by 50%, 39%, and 37%, respectively. Although five communicable, maternal, neonatal, and nutritional diseases still rank among the top ten causes of disability-adjusted life years (DALYs) in 2017, their burden has dropped significantly from 2007. In contrast, the four NCDs among these top contributors have risen dramatically, with changes ranging from +41% for IHD and diabetes, to about +35% for COPD and stroke. Even so, neonatal disorders remain the leading cause of DALYs and premature death despite the major decline in under-five and infant mortality rate since 1990. Disparities in reproductive, maternal, newborn, and child health (RMNCH) coverage across wealth quintiles and the rural-urban divide further raise concerns about this issue.

Accompanying India's epidemiological shift is urbanization. From 2001 to 2011, the urban population grew by 31.8%. This shift may seem a favorable marker of the economy, but in 2011, the slum population accounted for 17.4% of all urban households (HHs). Percentages varied widely among states, from 1.5% in Kerala to 35.7% in Andhra Pradesh. Overall, the number of slum HHs increased by 37% within one decade. The urban poor are particularly vulnerable to under-five mortality, respiratory illness, and vector-borne diseases due to limited access to safe water, sanitation, and health services.

APPENDIX 4. FINANCING, GOVERNANCE, AND SERVICE DELIVERY

Box 2. Financing

India's total health expenditure (THE) during 2016-2017 was estimated to be 3.8% of its GDP.¹³ For the same year, GHE made up 32% of THE while out-of-pocket expenditure (OOPE) was 58.7%. The GHE was around 4.4% of government spending, and its center:state share was 31:69. External funding only contributed to 0.6% of the 2016-2017 THE, with the top five donors comprising 86% of all official development assistance disbursements from 2008 to 2018 (Figure 1).⁶¹ From largest share to smallest, they were the Global Fund, International Development Association, United Kingdom, United States, and Global Alliance for Vaccines and Immunization.

During the 2000-2010 timeframe, roughly 3% of government spending was devoted to health, with little year-to-year variation. 14 In 2010, the Gol organized the High Level Expert Group (HLEG), which would guide the country on how to approach universal health coverage (UHC).⁶⁴ The HLEG recommended that the GHE be raised from 1.2% of the GDP in 2011, to 2.5% by 2017 and 3% by 2022. These proposed changes would reduce the burden of private OOPE and any associated poverty. Nonetheless, the GHE has continued to stagnate. India's 2016 GHE was only 1.17% of its GDP, a share that is even lower than the average for low-income countries (1.57%).⁶ Out of the 10 South-East Asia Region countries reporting data in 2016, India's GHE (as a % of the GDP) was the second-lowest. A historically low GHE and high OOPE combine to create a lack of financial risk protection, i.e., high rates of catastrophic and impoverishing health spending. In 2011, 17.3% of India's HHs spent more than 10% of their total HH budget on health, and 4.2% were pushed below the poverty line of 2011 PPP\$ 1.90.14 In 2014, borrowing was the major source of financing of hospitalization for 24.9% of rural HHs and 18.2% of urban HHs. For urban HHs, the percentages varied from 13.7% in the top wealth quintile to 21.9% and 21.7% in the two poorest quintiles while the range was only 3.7% for rural HHs. Contribution from friends or relatives (rural: 5.4%, urban: 5.0%) and sale of physical assets (rural: 0.8%, urban: 0.4%) were the two other named sources of financing medical expenditure aside from HH income or savings. In 2015-2016, about a quarter of women reported money as a barrier to accessing medical advice or treatment, up from 17% during 2005-2006. 15,16 To grapple with this ongoing lack of financial risk protection, the National Health Policy (NHP) of 2017 set a GHE target of 2.5% of the GDP by 2025.²² Beyond that, the NHP 2017 argues for health care as a human right, a core tenet underlying UHC.

Box 3. Governance

The Ministry of Health and Family Welfare (MoHFW) is tasked with overall decision-making in health policy at the federal level. ¹⁷ Authority is shared between two departments: 1) the Department of Health and Family Welfare arranges and delivers national programs and 2) the Department of Health Research directs health promotion and research efforts. Service delivery is in the hands of the states, specifically the Directorates of Health Services and Departments of Health and Family Welfare. States oversee health personnel, food and drug quality, and gather relevant data, among other responsibilities. Finally, districts are served by Panchayati Raj, which set up primary health centers (PHCs) and enact social policy. Figure 11 lays out India's health governance in more detail.

Because states are given the freedom to run their own health systems, implementation differs across the country. This decentralization has led to fragmented service delivery models and insurance schemes—even those spearheaded by the government—and in turn, variations in coverage and health outcomes across the country. Looking at India overall, 63% of the total population was not covered under any health insurance during 2017-2018.⁶ Of those with coverage, 78% were covered through public insurance companies mostly affiliated with government health schemes such as the Employees' State Insurance Scheme (ESIS), Central Government Health Scheme (CGHS), and Rashtriya Swasthya Bima Yojana (RSBY). The ESIS and CGHS are social insurance programs that cover employees and families in the formal sector.^{23,24} Both rely on beneficiary contributions but offer broader benefits than RSBY, which aided BPL HHs.^{23–25}

Box 4. Service delivery

Rural-urban divide

In 1943, the Gol-appointed Bhore Committee investigated India's health climate and advised an appropriate framework to address community needs. ¹⁹ The committee synthesized its observations into eight core objectives, including a preventive-curative system, proximity to health services, population-specific programs, and basic health care for all—regardless of socioeconomic status. The findings proved transformative for rural health systems, which adopted a three-tiered structure. ⁶⁵

Rural regions lag behind their urban counterparts with respect to certain RMNCH services. For example, rural mothers and children have less coverage for ante- and postnatal care, skilled birth attendants, and immunizations.⁸ In 2005, the Gol established the National Rural Health Mission (NRHM) to build capacity for human resources, physical infrastructure, and community engagement in rural areas.⁶⁶ In 2013 came the conception of reproductive, maternal, newborn, child, and adolescent health, a more holistic approach to maternal and child health (MCH). In the same year, the Gol announced the National Health Mission (NHM), which subsumed the NRHM and created its "sister"-program, the National Urban Health Mission (NUHM). The NRHM was a driving force behind strengthening rural health infrastructure. From 2005 to 2019, the number of rural subcenters (SCs) increased by 11,385; rural PHCs by 1,619; and rural community health centers (CHCs) by 1,989.¹⁸ As of March 31st, 2020, a total of 984,318 rural ASHAs had been recruited under the NRHM.⁶⁷ However, the number of SCs, PHCs, and CHCs still falls short of Indian Public Health Standards by 23%, 28%, and 37%, respectively.¹⁸ There were also shortfalls in staffing at all three tiers, the largest ones being physicians (the numbers fall short of these standards by 87%), surgeons (86%), pediatricians (80%), dental surgeons (79%), and obstetrician-gynecologists (75%) at CHCs.

Though the Bhore Report heavily inspired health systems in rural India, urban areas continue to suffer from a lack of defined infrastructure. In contrast to an emphasis on primary care, cities are concentrated with private practices that deliver secondary and tertiary services. ^{12,19} Ever-rapid urbanization leaves India more prone to social and intermediary determinants, from sedentary occupations to air pollution and traffic, that enable NCD and vector-borne disease onset. ¹² Underprioritizing primary services, which center on disease prevention and lifestyle monitoring, means that patients may forgo care and in the long term, present with more advanced health conditions that warrant higher-cost treatment. Moreover, the unregulated nature of the private sector leads to low-quality coverage for urban communities.

The urban poor, homeless, temporary migrants, sex workers, and street children are among the highest-risk populations in the city. The NUHM was initiated as part of the NHM in 2013 to sustain the health needs of such vulnerable population. He are model was proposed, one that towns and cities could fit to their health concerns and infrastructure. As of July 1st, 2019, there was a 44% shortfall of urban primary health centers (U-PHCs). Only five of the 36 states and union territories (UTs)—Andhra Pradesh, Himachal Pradesh, Rajasthan, Chandigarh, and Delhi—had reached their set threshold of functioning U-PHCs. Five states and UTs had zero U-PHCs in position: Goa, Meghalaya, Uttarakhand, Lakshadweep, as well as Daman and Diu (then, considered separately from Dadra and Nagar Haveli). Workforce shortages are widespread, with a major shortage of lab technicians (51%) at U-PHCs and radiographers (48%) at urban community health centers (U-CHCs).

Public and private sectors

Beginning in the 1980s, the healthcare landscape of India was extensively remodeled. The "liberalization phase" from 1990 to 1999 allowed state governments to be facilitators—rather than regulators—of the private health sector. The turn of the 21st century marked a surge in the number of private hospitals, from a mere 19% share in 1974, to 75% in 2000. Today, close to 90% of India's hospitals are private. This dominance is also reflected in service delivery: in 2014, private facilities provided 58% and 68% of inpatient treatments in rural and urban areas, respectively. The split was even more pronounced for outpatient care, where the corresponding figures were 71% (rural) and 79% (urban). Further, the public primary health system serves only 10% of India's current needs whereas its capacity should be 80-90%. The leverage that the private sector has on health care calls into question its quality. In 2010, the Parliament passed the Clinical Establishments (Registration and Regulation) Act to set minimum standards across all health facilities in India. Since its implementation is delegated to the states, most of the private sector still operates without regulation. As of 2015, 16 of the 29 states had no legislation requiring private facilities to hold a license. For the other states, guidelines were weak or obsolete.

• APPENDIX 5. RURAL AND URBAN DELIVERY MODELS

Table 5. Rural and urban service delivery models

Tier	Rural	Urban
2	CHC ► Referral unit for nearby PHCs ► Serves 120,000 (plain) or 80,000 (hilly/less accessible/tribal) ► 30 beds, operating room, X-ray, labor room, labs ► Staffed by 4 specialists and 21 other health workers PHC ► Contact point between village and physician; referral unit for 5-6 SCs	U-CHC ➤ Referral unit for 4-5 U-PHCs ➤ Serves 250,000 (cities) or 500,000 (metros) ➤ Offers inpatient care, minor surgeries, and institutional deliveries ➤ 30-50 beds (cities) or 100 beds (metros) U-PHC ➤ Serves 50,000-60,000 (25,000-30,000 in slums); 75,000 (high-density areas); or 5,000-10,000 (isolated)
	 Serves 30,000 (plain) or 20,000 (hilly/less accessible/tribal) Provides curative and preventive care 4-6 inpatient beds Staffed by 1 physician and 14 other health workers; NRHM provides 2 more nurses 	slum clusters) ➤ Located inside or within 0.5 km of slum ➤ Offers outpatient consultations, basic lab testing, prescriptions, health education, counseling for all communicable diseases and NCDs ➤ Convenient hours to allow slum populations access ➤ Staffed by 2 physicians, 3 nurses, 1 pharmacist, 1 lab technician, 1 lady health visitor, 4-5 auxiliary nurse midwives, 1 program manager, 3 support workers, 1 monitoring & evaluation
1	SC ➤ Contact point between community and primary health system ➤ Serves 5,000 (plain) or 3,000 (hilly/less accessible/tribal) ➤ Provides MCH, family welfare, nutrition, immunization, diarrhea, communicable disease control services ➤ Staffed by 1+ ANM/female and 1 male health worker; NRHM provides 1 more ANM	ANM ➤ Serves 10,000 ➤ Offers preventive and promotive care at HH level ➤ Outreach sessions (monthly to area, weekly to slums) ASHA ➤ Serves 1,000-2,500 ➤ Contact point between urban slum and U-PHC ➤ Promote healthy behavior and awareness of services Mahila Arogya Samiti ➤ Serves 250-500 ➤ Foster health awareness within the community
C	Immarized from Chokshi M. Patil R. Khanna R. Neogi S. Sharr	► Encourage access to designated facilities

Source: summarized from Chokshi M, Patil B, Khanna R, Neogi S, Sharma J, Paul V, et al. (2016)⁶⁵ and National Urban Health Mission: Framework for Implementation (2013).⁹ Populations served are in terms of individuals, not HHs.

APPENDIX 6. MAIN SHORTCOMINGS OF RASHTRIYA SWASTHYA BIMA YOJANA

Box 5. Main shortcomings of Rashtriya Swasthya Bima Yojana (RSBY)

Population coverage. With a limit of five members per family, penetration was small when compared to the capless ESIS and CGHS. Both eligible families and participating insurance firms had to re-enroll each year, which made for a logistical hassle. Awareness campaigns were left solely to the insurers, who would have minimal interest in stimulating demand and claim amounts. As a result, even after five years of RSBY, most districts had enrollment rates of less than 50%.

Service Coverage. The annual cover of Rs30,000 was rather low. Even though beneficiaries had cashless access to a variety of services, outpatient care was not included. Outpatient costs make up more than half of India's OOPE. Unfortunately, the RSBY package neglected this burden.

Financial risk protection. From 2000 to 2012, there was a 5% decrease in per-person outpatient OOPE, but the likelihood of such expenses climbed by 23%. In 2012, 9% of families incurring inpatient OOPE faced annual expenditures above the RSBY cover—the average was around Rs75,000-80,000. Nonetheless, there was an increase in non-medical HH expenditure, suggesting that the scheme offered some financial stability to beneficiaries.

Utilization and empanelment. From 2008 to 2013, about 130 million beneficiaries availed only 5.8 million inpatient services, against an expectation of 50 million. The empanelment process did not screen providers for any certification and was less inclusive of rural hospitals. RSBY may have attracted business, however. For instance, during RSBY expansion in Chhattisgarh (2012-2017), the total number of empaneled private hospitals more than doubled. Of those empaneled after 2012, none had been operating for more than a year. While only 20% of hospitals established before 2012 housed no general ward beds, the share grew to 50% post-2012. Expansion of the scheme favored dental and eye providers, who had higher profit margins. Dental and eye claims saturated the market, likely at the expense of more essential services. This supplier-induced demand signifies the profit-driven behaviors of private practice.

Regulation. Monitoring and supervision were a responsibility to be shared among the central and state governments, as well as insurance companies. Even so, there were no clear guidelines on how to carry out this oversight. Over time, premiums paid to insurers steadily increased while reimbursements to hospitals by insurers slightly decreased.

Source: adapted from Karan A, Yip W, Mahal A $(2017)^{26}$; Khetrapal S, Acharya A $(2019)^{27}$; Hooda S $(2020)^{68}$; Dong D, Smith O, Chhabra S $(2019)^{28}$; Keshri V, Gupta S $(2019)^{51}$