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## How does India's overall healthcare financing and insurance infrastructure including PMJAY, private insurance, and state health schemes affect the affordability of healthcare services, and what policy reforms can enhance financial risk protection for vulnerable populations?

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### Abstract

India has long faced a challenge of high Out-of-Pocket Expenditure (OOPE) on healthcare, which historically accounted for over 60 percent of total health spending and remains one of the highest globally despite recent progress (NHA data shows a decline from 62.6% to 39.4% between 2015 and 2022) (Ministry of Health and Family Welfare; ORF analysis). Heavy reliance on direct payments continues to cause financial hardship for households, pushing millions into poverty each year. In response, the Government of India has expanded its healthcare financing architecture, notably with the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY), state health insurance programs, and growth in private health insurance coverage (Business Standard).

This paper evaluates how these elements shape healthcare affordability and financial risk protection for vulnerable populations. Using a secondary research methodology, the study synthesizes data from government reports, the National Sample Survey, National Health Accounts, international databases (WHO, World Bank), and peer-reviewed literature. Comparative studies suggest PMJAY has effectively eliminated OOPE for certain inpatient procedures in select settings, while private insurance often reduces but does not fully mitigate financial burden (e.g., zero OOPE under PMJAY vs significant OOPE in private plans for surgical care) (PubMed studies). However, evidence from national surveys indicates mixed results, particularly regarding outpatient care and childbirth expenditures, where insurance coverage has not always reduced household spending (NFHS-based research). Additionally, critical gaps persist in outpatient services, medicines, diagnostics, informal payments, and equitable access across regions (Science Direct).

The paper anticipates that while public insurance schemes have partially reduced OOPE, persistent affordability barriers highlight the need for structural reforms including expanded coverage beyond hospitalization, strengthened primary care financing, and improved regulatory oversight to enhance financial risk protection and advance universal health coverage in India.

**Keywords:** Healthcare Financing in India, Out-of-Pocket Expenditure (OOPE), Financial Risk Protection, Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY), Health Insurance, Healthcare Affordability, and Universal Health Coverage (UHC)

### 1. Introduction

#### 1.1 Background of Healthcare Financing in India

India operates a mixed healthcare system in which both public and private sectors play significant roles. While the government finances and delivers primary and preventive care, the private sector accounts for nearly 60% of hospital beds and dominates secondary and tertiary services. Despite

being one of the lowest-cost healthcare markets globally, affordability remains a structural challenge. India's total healthcare expenditure is approximately 3% of GDP (₹10 trillion), with per capita spending of nearly US\$85 considerably lower than many developing economies (National Health Accounts 2021–22) <sup>[15]</sup>.

Out-of-Pocket Expenditure (OOPE) continues to be a major

source of healthcare financing, constituting about 45% of total health expenditure (NHA 2021–22). A significant share of OOPE is driven by outpatient care and medicines, which are often not covered under insurance schemes. High medical inflation estimated at 12–15% annually in recent years further intensifies financial strain. Studies suggest that 60–80 million Indians are pushed into poverty annually due to healthcare costs. The burden is particularly severe when treatment costs are assessed relative to income: for instance, a Coronary Artery Bypass Graft (CABG) costs nearly 1.8 times India's per capita income, compared to only 0.3 times in the United States.

### 1.2 Evolution of Health Insurance in India

Health insurance in India has evolved from limited public schemes to broader coverage initiatives. Early programs such as the Rashtriya Swasthya Bima Yojana (RSBY) targeted below-poverty-line households. A major reform occurred in 2018 with the launch of Ayushman Bharat, including the Pradhan Mantri Jan Arogya Yojana (PMJAY), which provides hospitalization coverage up to ₹5 lakh per family annually for the bottom 40% of the population. Parallely, state-level schemes expanded coverage, while private health insurance grew, particularly among salaried and urban populations. The payor mix reflects this shift: government schemes increased from 23% in FY14 to 41% in FY22, while OOPE declined from 69% to 45% over the same period (NHA).

### 1.3 Problem Statement

Despite expanded insurance coverage, catastrophic health expenditure persists. Government schemes often provide wide but shallow coverage, primarily for inpatient care, leaving outpatient services and medicines largely uncovered. Rural–urban disparities, interstate variations, and income-based inequalities continue to shape unequal access. Additionally, the “missing middle” self-employed and lower-middle-income households not fully covered by public schemes nor adequately insured privately remain vulnerable.

### 1.4 Significance of the study

This study is policy-relevant in the context of India's pursuit of Universal Health Coverage (UHC). By examining the interplay between public schemes, state programs, and private insurance, it contributes to debates on healthcare affordability and financial risk protection. The focus on vulnerable groups low-income households and informal workers ensures that the analysis aligns with equity and inclusive growth objectives.

## 2. Literature Review

### 2.1 Theoretical Framework

Financial Risk Protection Theory emphasizes minimizing the financial burden that illness imposes on households. The core idea is to ensure individuals do not face hardship or catastrophic spending when accessing necessary healthcare services. Evidence suggests that high out-of-pocket expenditures (OOPE) undermine financial risk protection and contribute to impoverishment, driving policy interventions such as government-financed insurance

schemes (Xu 2003 et al.)<sup>[26]</sup>.

Universal Health Coverage (UHC) Framework is a health systems objective where all individuals obtain essential health services without financial hardship. UHC encompasses three dimensions: population coverage, range of services, and financial protection. India's National Health Policy and Sustainable Development Goals explicitly adopt UHC as a target, prompting expansion of schemes like PMJAY (WHO).

Health Financing Models such as the Beveridge Model (publicly funded, government-provided services), the Bismarck Model (mandatory insurance with regulated private providers), and Market Models (private insurance and out-of-pocket payment) provide analytical lenses to understand healthcare financing structures globally. India's healthcare financing reflects a mixed model: government provisioning (Beveridge-like for primary care), insurance schemes (Bismarck-like elements), and significant market-driven service delivery.

### 2.2 Empirical Studies

**2.2.1 OOPE Trends in India:** National Health Accounts (NHA) and NSSO data consistently show high OOPE as a major financing component. According to NHA 2021–22, OOPE constituted approximately 45% of total health expenditure in India a significant decline from earlier estimates but still among the highest in developing economies (Ministry of Health and Family Welfare). NSSO surveys reveal that outpatient services and medicines account for a large share of this spending, indicating insurance schemes focused mainly on hospitalization may not fully address financial burdens.

**2.2.2 Impact Assessments of PMJAY:** Studies demonstrate that PMJAY has reduced hospitalization-related OOPE for beneficiaries in several states. For example, research indicates zero OOPE for certain insured procedures under PMJAY compared to significant OOPE among uninsured groups (Roy 2024 et al.)<sup>[19]</sup>. However, effectiveness varies between states depending on scheme implementation, provider participation, and service utilization rates.

### 2.2.3 Comparative Studies on Insurance Effectiveness:

Evidence suggests that public insurance schemes like PMJAY and state plans provide broader coverage for the poor, while private health insurance with higher premiums and limited uptake in low-income groups primarily benefits urban and formal sector populations (Chaudhuri). Comparative analyses show that while private insurance may reduce OOPE slightly for those covered, it does not consistently achieve financial risk protection at the population level.

**2.2.4 Studies on Affordability Gaps:** Several authors highlight persistent affordability gaps in outpatient care and medicine costs despite insurance expansion. Research using NSSO and household expenditure surveys shows that medicine costs remain the largest contributor to OOPE, and informal payments further exacerbate affordability issues (Sundaraman 2024 et al.)<sup>[21]</sup>.

### 2.3 Research Gaps

Despite an expanding body of literature, important gaps remain:

- **Limited Integrated Comparisons:** Few studies systematically compare PMJAY with state health schemes and private insurance in terms of OOPE reduction and financial risk protection.
- **Insufficient Focus on Outpatient Expenditure:** Most

evaluations center on hospitalization; outpatient care and medicines critical drivers of OOPE are often under-analyzed.

- **Lack of State-Wise Affordability Analysis:** There is limited research analyzing affordability and financial protection disparities across states with different healthcare systems and insurance implementations.

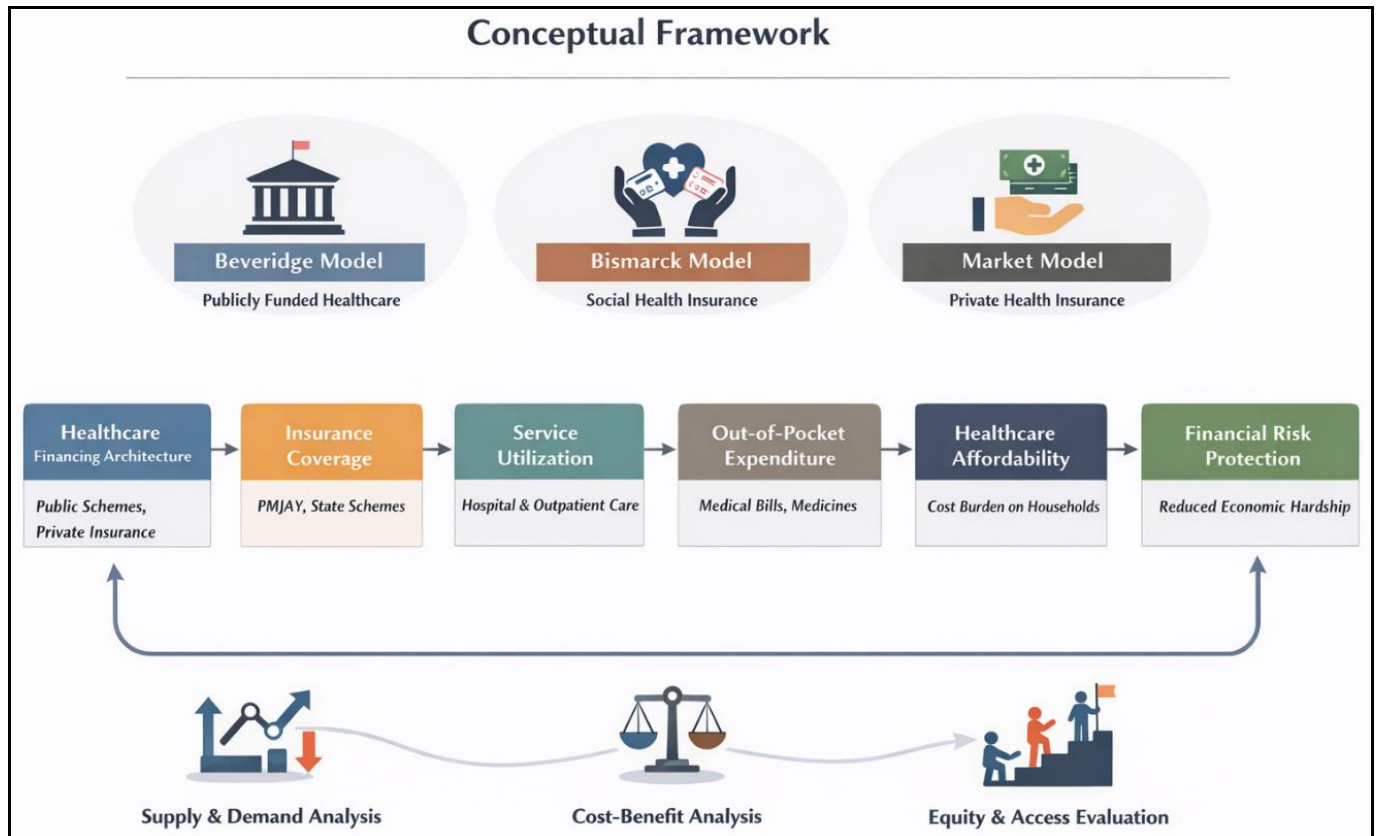


Fig 1: Conceptual Framework

The conceptual framework illustrates the relationship between healthcare financing and financial risk protection in India. It begins with three foundational economic models Beveridge (publicly funded healthcare), Bismarck (social health insurance), and Market Model (private insurance) which shape the healthcare financing architecture. This architecture influences insurance coverage through schemes like PMJAY, state programs, and private insurance. Coverage affects service utilization, including hospital and outpatient care, which determines the level of out-of-pocket expenditure (OOPE). OOPE directly impacts healthcare affordability for households, ultimately influencing financial risk protection. The framework integrates supply-demand analysis, cost-benefit evaluation, and equity assessment to evaluate systemic effectiveness.

### 3. Research Objectives

This study aims to analyze the structural composition of India’s healthcare financing system, examining the relative roles of public expenditure, government-sponsored insurance schemes such as PMJAY, state health programs, and private health insurance. It further seeks to evaluate the effectiveness of these financing mechanisms in reducing

out-of-pocket expenditure (OOPE), particularly among vulnerable and low-income populations. The research also assesses how the design and implementation of these schemes influence overall healthcare affordability and access to essential services. Finally, the study intends to identify existing policy gaps and propose evidence-based reforms to strengthen financial risk protection and advance progress toward universal health coverage in India.

### 4. Hypotheses

Based on the research objectives and conceptual framework, the following hypotheses are formulated for empirical testing:

- H1:** Publicly funded health insurance schemes, including PMJAY and state-sponsored programs, have a statistically significant effect in reducing hospitalization-related out-of-pocket expenditure (OOPE) among beneficiary households compared to uninsured households.
- H2:** Private health insurance coverage improves access to healthcare services; however, it does not result in a statistically significant reduction in overall healthcare affordability burden for low-income populations when

measured as a proportion of household income.

**H3:** Despite the expansion of public and private health insurance coverage, outpatient care expenses and medicine costs continue to constitute a significant share of total out-of-pocket expenditure and remain key drivers of catastrophic health expenditure in India.

These hypotheses will be tested using secondary data analysis to evaluate financial risk protection and affordability outcomes across different population groups.

**5. Research Methodology**

**5.1 Research Design and Data Sources**

This study adopts an analytical and evaluative research design using a descriptive and comparative approach to assess India’s healthcare financing architecture. The research is primarily based on secondary data, forming the major component of analysis. Key data sources include National Health Accounts (NHA), NSSO Health Rounds, National Family Health Survey (NFHS), official government reports on PMJAY and state schemes, and international databases such as WHO and World Bank health expenditure statistics. Peer-reviewed academic journals are also used to support empirical and theoretical insights. A minor primary component may include expert interviews and structured policy document reviews to contextualize findings.

**5.2 Data Analysis Techniques**

The study employs trend analysis to examine changes in out-of-pocket expenditure (OOPE) over time and assess the impact of insurance expansion. Comparative state-level analysis is conducted to evaluate disparities in implementation and affordability outcomes. Ratio analysis is used to examine the relative shares of public, private, and household expenditure. Additionally, thematic analysis of policy documents supports evaluation of institutional and structural gaps.

**6. Overview of India’s healthcare financing architecture**

**6.1 Public Health Financing**

India’s healthcare financing system is primarily tax-funded, with expenditure shared between the central and state governments. According to the National Health Accounts (NHA) 2021–22 [15], government health expenditure increased to nearly 48% of total health expenditure, while Out-of-Pocket Expenditure (OOPE) declined to around 45% (MoHFW). Public health spending as a percentage of GDP has gradually increased but remains modest compared to global averages. States account for nearly two-thirds of public health spending, reflecting decentralization in health

governance. Despite increased allocations under the National Health Mission and Ayushman Bharat, fiscal constraints and inter-state disparities persist.

**6.2 Ayushman Bharat – PMJAY**

The Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY) provides hospitalization coverage of up to ₹5 lakh per family annually for approximately the bottom 40% of India’s population (MoHFW). It primarily covers secondary and tertiary inpatient care through empaneled public and private hospitals. Government data indicates that PMJAY has reduced hospitalization-related OOPE in several beneficiary groups. However, the scheme excludes outpatient consultations, diagnostics outside hospitalization, and most medicine purchases categories that constitute a significant share of OOPE (NSSO 75th Round). Implementation capacity and provider participation vary significantly across states, affecting effectiveness.

**6.3 State Health Insurance Schemes**

Several states operate complementary or independent schemes, such as the Chief Minister’s Comprehensive Health Insurance Scheme in Tamil Nadu and Aarogyasri in Telangana. These schemes often provide broader procedure lists or higher package rates. However, benefit packages, financing models, and administrative efficiency differ widely. Some states allocate substantial budgetary support, while others face sustainability concerns. Evidence suggests that states with stronger institutional capacity demonstrate better financial protection outcomes (World Bank).

**6.4 Private Health Insurance**

Private health insurance in India includes employer-based group insurance and individual policies, primarily concentrated in urban and formal-sector populations. According to IRDAI and NHA data, private insurance accounts for nearly 8–10% of total health expenditure (MoHFW). While it enhances access to private hospitals, challenges persist, including high premiums, co-payments, exclusions, and claim denials. Moreover, private insurance penetration remains limited among low-income households, contributing to the “missing middle” problem and continued reliance on OOPE.

**7. Analysis: Impact on Healthcare Affordability**

**7.1 Trends in Out-of-Pocket Expenditure (OOPE)**

India’s healthcare financing structure has historically been characterized by high dependence on household out-of-pocket payments. However, recent policy interventions including expansion of public spending and insurance coverage have altered this composition.

**Table 1:** Trends in Out-of-Pocket Expenditure in India

Year	OOPE as % of Total Health Expenditure	Government Health Expenditure Share (%)	Key Observations
2014–15	62.6%	28.6%	High household burden; limited insurance coverage
2017–18	~48–50%	~35%	Early PMJAY phase; gradual public spending rise
2021–22	39.4%	48.0%	Significant OOPE decline; expanded public financing

(Source: National Health Accounts 2021–22, MoHFW) [15].

The decline from 62.6% to 39.4% represents a structural improvement in financial risk pooling. However, critical evaluation reveals three concerns:

1. **Relative vs Absolute Burden:** While the percentage share has declined, rising medical inflation (12–15% annually, as noted in the attached research data) means real household spending remains high.
2. **Urban–Rural Divide:** NSSO (75th Round) indicates rural households allocate a higher proportion of income to health, particularly outpatient services.
3. **Composition of Spending:** A large share of OOPE persists in outpatient and pharmaceutical expenses areas inadequately covered under most insurance schemes.

Thus, the reduction in aggregate OOPE does not fully translate into proportional gains in affordability for vulnerable groups.

### 7.2 Catastrophic Health Expenditure (CHE)

Catastrophic health expenditure is commonly defined as healthcare spending exceeding 10% of total household consumption or 40% of non-subsistence expenditure (WHO; Xu 2003 et al.) [26]. Despite policy expansion, CHE remains a significant concern.

**Table 2:** Indicators of Catastrophic Health Expenditure in India

Indicator	Estimated Value	Source
Population facing CHE (>10% consumption)	~17–18% of households	NSSO 75th Round
Individuals pushed into poverty annually due to health costs	55–60 million	World Bank
Share of OOPE spent on medicines	43–50%	NSSO; NHA
Hospitalization cost relative to per capita income (CABG)	1.8 times	Attached research data

Although PMJAY reduces hospitalization shocks for beneficiaries (coverage up to ₹5 lakh annually), outpatient care, chronic disease treatment, and medicine purchases remain largely uninsured. Since medicines constitute nearly half of OOPE, financial vulnerability persists even among insured households.

Critically, insurance expansion appears more effective in mitigating episodic hospitalization shocks than chronic affordability stress. This distinction is crucial: affordability is not only about catastrophic events but also about recurring outpatient expenditures that cumulatively erode household savings.

Moreover, interstate disparities compound CHE risks. States with stronger public provisioning demonstrate lower CHE incidence compared to states heavily dependent on private providers (NHA; WHO data). Implementation capacity such as claim settlement efficiency and hospital empanelment also influences the degree of protection.

While headline data suggests progress in reducing OOPE, structural affordability gaps remain due to:

- Incomplete coverage of outpatient and pharmaceutical care
- High medical inflation
- Uneven state-level implementation
- Persistent informal payments in some public facilities

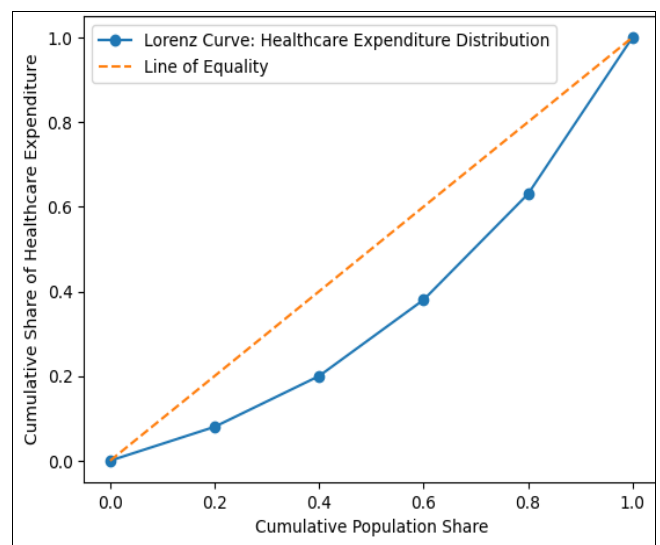
Therefore, India’s healthcare financing reforms have improved macro-level indicators but have not yet achieved comprehensive financial risk protection consistent with Universal Health Coverage goals.

### 7.3 Impact on Healthcare Affordability on income inequality

The Lorenz Curve, a widely used tool in income inequality analysis, can also be applied to examine disparities in healthcare expenditure across income groups. In the context of India’s healthcare financing system, the Lorenz Curve illustrates how the burden of healthcare spending is unevenly distributed among households. Using quintile-wise expenditure distribution derived from NSSO health survey data, the poorest 20% of the population accounts for only a small share of total healthcare expenditure, while the richest quintile contributes a disproportionately large share.

**Table 3:** Healthcare Affordability on income inequality

Income Quintile	Share of Healthcare Expenditure (%)	Cumulative Population Share	Cumulative Expenditure Share
Poorest 20%	8	0.2	0.08
Second 20%	12	0.4	0.20
Middle 20%	18	0.6	0.38
Fourth 20%	25	0.8	0.63
Richest 20%	37	1.0	1.00



**Fig 2:** Lorenz Curve Showing Inequality in Healthcare Expenditure Burden

The curve deviates significantly from the line of perfect equality, indicating structural inequality in the capacity to spend on healthcare services. This pattern reflects the fact that low-income households often defer treatment, rely on public facilities, or incur catastrophic out-of-pocket expenditure when faced with medical emergencies. Consequently, despite the expansion of schemes such as PMJAY, income inequality continues to influence healthcare utilization and affordability. The Lorenz Curve therefore provides a conceptual basis for understanding why insurance coverage alone may not fully eliminate financial barriers to healthcare access in India.

### 8. Comparative Evaluation of Healthcare Financing Mechanisms in India

**Table 3:** Comparative Healthcare Financing Mechanisms in India

Criteria	PMJAY (Ayushman Bharat)	State Health Insurance Schemes	Private Health Insurance
Target Population	Bottom 40% (economically vulnerable households)	Varies by state; mostly low-income groups	Middle- and upper-income households
Coverage Limit	₹5 lakh per family per year (hospitalization)	₹1–5 lakh depending on state	Depends on premium; customizable
Funding Source	Tax-funded (Central + State governments)	State government budgets (sometimes co-funded)	Individual premiums + employer contributions
Hospital Network	Public + empanelled private hospitals	Mostly public + selected private hospitals	Primarily private hospitals
Outpatient Coverage	No (focus on inpatient care)	Limited (varies widely)	Partial, depending on policy
Medicine & Diagnostics Coverage	Included during hospitalization only	Limited outside hospital care	Depends on policy; often capped
Affordability Impact	Moderate reduction in hospitalization-related OOPE	Moderate but uneven impact	Limited impact for low-income groups
Financial Risk Protection	Strong for catastrophic inpatient events	Variable effectiveness	Protective for insured but limited population reach
Equity Orientation	High (pro-poor targeting)	Moderate; varies by state capacity	Low (income-based access)
Administrative Efficiency	Digital claim system; implementation varies by state	Highly variable	Generally efficient but profit-driven
Coverage of Informal Workers	Yes (if eligible under deprivation criteria)	Yes (state dependent)	Very limited due to premium barriers

The comparative evaluation reveals structural differences in objectives, financing mechanisms, and impact on healthcare affordability.

PMJAY demonstrates strong equity orientation by targeting economically vulnerable households and providing substantial hospitalization coverage (₹5 lakh annually). Empirical evidence suggests it significantly reduces inpatient-related out-of-pocket expenditure (OOPE). However, its exclusion of outpatient services and chronic disease management limits its long-term affordability impact. Thus, while effective against catastrophic health shocks, it does not comprehensively address routine medical expenses. State health schemes show moderate effectiveness but vary widely in implementation efficiency, funding adequacy, and provider networks. States with stronger public health systems achieve better affordability outcomes, whereas fiscally constrained states show limited financial

protection. This heterogeneity creates interstate disparities in risk protection.

Private health insurance, although administratively efficient and offering broader hospital choices, primarily benefits formal-sector and higher-income households. Premium costs restrict access for low-income populations, and policies often include exclusions, co-payments, and caps. Consequently, private insurance contributes minimally to reducing national-level affordability burdens.

Critically, all three mechanisms inadequately address outpatient care and medicine costs the largest contributors to OOPE. Therefore, while insurance expansion has reduced aggregate OOPE, comprehensive financial risk protection remains incomplete. Structural reforms must integrate outpatient coverage and strengthen primary healthcare financing to achieve equitable and sustainable affordability improvements.

**Table 4:** Macroeconomic Context of Healthcare Financing in India

Indicator	Value	Interpretation
Total Health Expenditure (% of GDP)	~3%	Low public health investment relative to global averages
Per Capita Health Expenditure	~US\$85	Indicates constrained system capacity
Medical Inflation Rate	12–15% annually	Rising treatment costs increase affordability pressure
OOPE Share (2014–15)	62.6%	High household burden
OOPE Share (2021–22)	39.4%	Decline due to expanded public financing

(Source: National Health Accounts 2021–22 <sup>[15]</sup>; Attached Research Data)

Although OOPE has declined significantly, the low public spending base (3% of GDP) and high medical inflation dilute the real affordability gains. The decline in OOPE

share reflects improved risk pooling, but rising treatment costs mean households still face financial strain in absolute terms.

**Table 5:** Comparative Financial Protection Indicators

Parameter	PMJAY	State Schemes (Avg.)	Private Insurance
Coverage Limit	₹5 lakh per family	₹1–5 lakh	Policy-dependent (premium-based)
Primary Focus	Inpatient hospitalization	Mostly inpatient	Inpatient + limited outpatient
Medicine Coverage	During hospitalization only	Limited	Partial (policy-based)
Target Population	Bottom 40%	Low-income households	Middle/upper-income
Affordability Impact	Moderate (reduces hospitalization shock)	Moderate (state-dependent)	Limited for poor

Source: Ministry of Health and Family Welfare, Ayushman Bharat–PMJAY Operational Guidelines; National Health Accounts 2021–22 <sup>[15]</sup>; Insurance Regulatory and Development Authority of India (IRDAI) Annual Report; State Government Health Scheme Reports.

PMJAY provides strong protection against catastrophic hospitalization expenses but excludes outpatient and chronic care costs. State schemes vary widely in effectiveness depending on fiscal capacity and governance. Private insurance improves access for formal-sector households but has limited impact on national affordability due to restricted coverage among low-income groups.

**Table 6:** Drivers of Catastrophic Health Expenditure (CHE)

Indicator	Estimated Value
Households Facing CHE (>10% consumption)	~17–18%
Individuals Pushed into Poverty Annually	55–60 million
Share of OOPE Spent on Medicines	43–50%
CABG Cost Relative to Per Capita Income	1.8 times

**Source:** NSSO 75th Round; World Bank; Attached Data

Medicines and outpatient services remain the largest contributors to financial vulnerability. Even with hospitalization coverage under PMJAY, recurring outpatient expenses drive long-term affordability stress. The high cost-to-income ratio of major procedures further highlights structural affordability gaps.

The data indicates that India has improved macro-level financial protection through insurance expansion, but structural weaknesses persist particularly in outpatient coverage, medicine costs, and interstate disparities. Insurance reforms have reduced catastrophic hospitalization shocks but have not fully achieved comprehensive healthcare affordability or universal financial risk protection.

## 9. Policy Reform Recommendations

### 9.1 Expand Outpatient and Medicine Coverage

One of the most significant gaps in India's healthcare financing architecture is the limited coverage of outpatient care and medicines under most insurance schemes, including PMJAY. Evidence from the National Sample Survey (NSS 75th Round) indicates that medicines account for nearly 43–50% of total out-of-pocket expenditure (OOPE) in India, particularly for outpatient treatment (NSSO 2019). Since PMJAY primarily focuses on hospitalization coverage, many households continue to bear recurring costs for consultations, diagnostic tests, and pharmaceuticals. Expanding insurance packages to include outpatient consultations, chronic disease management, and essential medicines would significantly improve financial risk protection. International experiences under universal health coverage frameworks show that primary and outpatient coverage is essential for reducing long-term household health expenditure burdens (World Health Organization 2023).

### 9.2 Strengthen Primary Healthcare Infrastructure

Strengthening primary healthcare infrastructure is critical to improving affordability and reducing dependence on costly secondary and tertiary care services. Under the Ayushman Bharat initiative, Health and Wellness Centres (HWCs) were introduced to expand primary care services, including preventive care, maternal health, and management of non-communicable diseases (MoHFW 2024). However, disparities in infrastructure, workforce availability, and service quality persist across states. Evidence suggests that

stronger primary healthcare systems reduce hospitalization rates and overall healthcare spending by promoting early diagnosis and treatment. Increased investments in rural healthcare facilities, medical personnel training, and telemedicine infrastructure could significantly enhance accessibility while lowering the financial burden on households.

### 9.3 Improve Claim Settlement Transparency

Efficient claim settlement processes are essential for ensuring the effectiveness of health insurance schemes. Studies evaluating PMJAY implementation highlight that delays in claim processing and reimbursement disputes between hospitals and insurers sometimes discourage private hospital participation (NITI Aayog 2021). Improving transparency through digital claim-tracking systems, standardized reimbursement protocols, and independent grievance redressal mechanisms would enhance trust among providers and beneficiaries. Transparent and efficient claim management can also reduce informal payments and ensure that beneficiaries fully utilize scheme benefits.

### 9.4 Increase public health expenditure as a percentage of GDP

India's public health expenditure remains relatively low compared to global standards. According to the National Health Accounts 2021–22 [15], total health expenditure in India is approximately 3% of GDP, with government spending accounting for around 1.9% of GDP (MoHFW 2024). Experts and policy institutions have consistently recommended increasing public health expenditure to at least 2.5–3% of GDP, as envisioned in the National Health Policy 2017. Higher public investment would strengthen public healthcare infrastructure, expand insurance coverage, and reduce reliance on private providers, ultimately lowering OOPE and improving healthcare affordability.

### 9.5 Integrate State and Central Health Databases

India's healthcare financing landscape is fragmented due to the coexistence of multiple central and state insurance schemes. Although PMJAY provides a national framework, implementation varies across states, and data integration remains limited. Integrating digital health databases through platforms such as the Ayushman Bharat Digital Mission (ABDM) would improve beneficiary identification, streamline claim verification, and reduce duplication of services (MoHFW 2023). Unified databases could also enable better monitoring of healthcare utilization patterns and policy evaluation across states.

### 9.6 Regulate Private Insurance Premiums

Private health insurance plays an important role in supplementing public healthcare financing, particularly for middle- and upper-income households. However, rising premiums and policy exclusions limit its accessibility for lower-income populations. Reports from the Insurance Regulatory and Development Authority of India (IRDAI) indicate that private health insurance penetration remains uneven and concentrated among urban populations (IRDAI 2023). Strengthening regulatory oversight, standardizing policy terms, and encouraging affordable insurance products could improve accessibility while protecting consumers from excessive premiums and hidden costs.

## 10. Discussion

India has made significant policy advances toward improving healthcare affordability through insurance-based reforms such as the Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (PMJAY) and expansion of state-level health schemes. These initiatives have contributed to a measurable decline in out-of-pocket expenditure (OOPE) from 62.6% of total health expenditure in 2014–15 to about 39.4% in 2021–22 (Ministry of Health and Family Welfare). While this reduction indicates progress toward financial risk protection, current reforms alone may not be sufficient to achieve Universal Health Coverage (UHC). According to the World Health Organization, UHC requires not only financial coverage but also equitable access to quality healthcare services. In India, insurance schemes largely focus on inpatient hospitalization, leaving outpatient services, diagnostics, and medicines which constitute nearly half of OOPE largely uncovered (NSSO 2019). Consequently, even insured households often incur substantial recurring medical expenses, limiting the broader affordability impact of insurance-based reforms.

Insurance-based financing also faces structural limitations when implemented without a robust public healthcare system. India's public health expenditure remains relatively low at approximately 1.9% of GDP, significantly below the levels observed in many countries pursuing universal healthcare systems (National Health Accounts 2021–22) [15]. As a result, the private sector continues to dominate healthcare service delivery, accounting for the majority of hospitalizations and outpatient consultations. Studies suggest that heavy reliance on private providers increases the risk of cost escalation and informal payments, particularly in the absence of strong regulatory oversight (NITI Aayog). Therefore, insurance coverage alone cannot ensure financial protection unless it is complemented by substantial investments in public healthcare infrastructure, workforce expansion, and primary care services.

Several structural barriers continue to limit healthcare affordability in India. These include high medicine prices, limited outpatient coverage, interstate disparities in healthcare infrastructure, and uneven implementation of insurance schemes. Evidence from the World Bank indicates that 55–60 million Indians are pushed into poverty each year due to healthcare costs, highlighting the persistent vulnerability of households to medical shocks. Addressing these challenges requires a broader systemic approach that integrates insurance expansion with strengthened public healthcare systems, improved regulation of private providers, and targeted policies to reduce medicine and diagnostic costs.

## 11. Conclusion

The expansion of health insurance coverage in India, particularly through Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (PMJAY), represents a major policy initiative aimed at improving financial risk protection and access to healthcare for economically vulnerable populations. PMJAY currently provides hospitalization coverage of up to ₹5 lakh per family annually for nearly 500 million beneficiaries, making it one of the largest publicly funded health insurance schemes globally (Ministry of Health and Family Welfare). Evidence suggests that the

expansion of such schemes has contributed to a decline in out-of-pocket expenditure (OOPE) as a share of total health spending from 62.6% in 2014–15 to approximately 39.4% in 2021–22 (National Health Accounts). This indicates progress in reducing catastrophic hospitalization-related expenses and improving financial protection for insured households.

However, despite these improvements, healthcare affordability in India remains constrained by several structural factors. A significant proportion of household healthcare spending continues to be driven by outpatient services and medicine costs, which together account for nearly 43–50% of OOPE (NSSO 2019). Additionally, substantial interstate disparities in healthcare infrastructure and implementation capacity limit the effectiveness of insurance programs across regions. Many schemes provide broad coverage for hospitalization but offer limited depth in terms of outpatient care, chronic disease management, and diagnostic services. Consequently, recurring medical expenses still place a considerable financial burden on households, and studies estimate that 55–60 million people in India are pushed into poverty annually due to healthcare costs (World Bank).

Achieving genuine financial risk protection and advancing toward Universal Health Coverage (UHC) therefore requires a more integrated and comprehensive policy approach. Increasing public health expenditure currently around 1.9% of GDP is essential to strengthen public healthcare infrastructure and reduce reliance on private providers (National Health Accounts). Policymakers must also expand coverage for outpatient care, promote preventive and primary healthcare services, and improve coordination between central and state health financing mechanisms. Ultimately, moving toward an equitable and affordable healthcare system in India will depend on combining insurance expansion with stronger public health investments, effective regulation, and sustained commitment to universal access.

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