Research Article

Public versus Private Health Insurance in India (2016–2026): A Systematic Review of Impacts on Hospital Revenue, Out-of-Pocket Expenditure and Quality of Care in Tertiary Hospitals

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Abstract

Background: India's health financing system has changed considerably since 2016. Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), launched in 2018, is now the largest government-funded health insurance scheme in the world, and private health insurance has grown steadily alongside it. How the two compare in their effects on hospital revenue, household out-of-pocket expenditure (OOPE) and quality of care in tertiary hospitals is an important question for universal health coverage (UHC).

Objectives: To synthesise evidence from 2016 to 2026 on how public (PM-JAY) and private health insurance affect (i) hospital revenue and financial viability, (ii) household OOPE and catastrophic health expenditure (CHE), and (iii) quality of care in tertiary hospitals in India.

Methods: The review followed PRISMA 2020. We searched PubMed, Scopus and Web of Science, together with reports from the National Health Authority (NHA), the Insurance Regulatory and Development Authority of India (IRDAI), the National Health Accounts and the 75th round of the National Sample Survey Office (NSSO). Studies published between 2016 and 2026 that examined PM-JAY or private insurance in relation to revenue, OOPE or quality of care in Indian tertiary hospitals were eligible. Two reviewers extracted data independently, and findings were synthesised narratively under three themes.

Results: Of 847 records identified, 38 sources met the inclusion criteria. On revenue (Theme A), PM-JAY had funded 13.25 crore hospital admissions worth ₹2.03 lakh crore by August 2026 and has become a major payer for empanelled hospitals, although private hospitals report low package rates and delayed reimbursement. On OOPE (Theme B), the share of total health expenditure paid out of pocket fell from 64.2% in 2013-14 to 39.4% in 2021-22, then rose to 43.4% in 2022-23. Household-level studies of PM-JAY give mixed results: some find lower catastrophic expenditure, others find no effect, particularly for care in private hospitals. On quality (Theme C), independent evidence is sparse; one four-year evaluation found no difference in patient satisfaction or length of stay between enrolled and non-enrolled patients. Private insurance has no standardised outcome reporting.

Conclusion: PM-JAY has extended hospital coverage at unprecedented scale, but the evidence that it has reduced household OOPE is mixed, and direct comparisons with private insurance are scarce. Private insurance is growing quickly but does not yet reach most of the "missing middle". Priorities include faster and more predictable provider payment, tighter control of co-payments and balance billing, and routine reporting of quality outcomes.

Keywords: PM-JAY; private health insurance; hospital revenue; out-of-pocket expenditure; quality of care; India; systematic review.

Introduction

For much of its recent history, India has relied heavily on household payments to finance health care. Out-of-pocket expenditure accounted for 64.2% of total health expenditure (THE) in 2013-14 [1], and hospitalisation is where the burden falls hardest. In the 75th round of the National Sample Survey (2017-18), 41.4% of households reporting a hospitalisation spent more than 10% of their total consumption expenditure on it, and 24.6% spent more than 20% [2,3]. Burdens were higher for households that used private facilities [2].

PM-JAY was launched on 23 September 2018 to address this problem for poorer households [4]. It offers cashless secondary and tertiary hospitalisation cover of up to ₹5 lakh per family per year at empanelled public and private hospitals, for 1,961 procedures across 27 specialties, and since September 2024 it has also covered all citizens aged 70 years and above [5]. Eligible families are identified from the Socio-Economic Caste Census 2011. By 31 August 2026 the scheme had funded 13.25 crore hospital admissions worth ₹2.03 lakh crore through more than 38,000 hospitals, and more than 48.51 crore people held Ayushman cards as of 21 September 2026 [5].

Private health insurance has also expanded. Health premiums reached ₹1,27,417 crore in 2024-25, an increase of 9.19% over the

previous year, and made up 41.42% of non-life premium; insurers processed 3.26 crore health claims worth ₹94,247 crore [6]. Even so, private insurance financed only 9.2% of THE in 2022-23, up from 3.4% in 2013-14 [1]. Between the households eligible for PM-JAY and those who can comfortably afford private cover sits a group often called the "missing middle" [7].

Earlier reviews have mostly examined PM-JAY or its predecessors on their own, looking at awareness, utilisation, implementation problems and financial protection [8–11]. Few have set public and private insurance side by side, and evidence on quality of care in tertiary hospitals remains patchy and concentrated in a small number of states. This review addresses that gap by synthesising evidence from 2016 to 2026 on three questions: how each type of insurance affects hospital revenue and financial viability, household OOPE and catastrophic expenditure, and quality of care. The answers matter for deciding what mix of public and private financing India should build as it moves towards UHC.

Methodology

Reporting standard

The review was conducted and reported according to the PRISMA 2020 statement [12].

Search strategy

We searched for studies published between January 2016 and September 2026. The search combined MeSH terms and free-text keywords for five concepts: (i) PM-JAY or Ayushman Bharat; (ii) private health insurance; (iii) hospital revenue or financial viability; (iv) out-of-pocket or catastrophic health expenditure; and (v) quality of care or tertiary hospitals. Concepts were combined with Boolean operators, and strings were adapted to each database.

Sources

Three electronic databases were searched: PubMed (biomedical and health policy literature), Scopus (multidisciplinary coverage, including social sciences) and Web of Science (citation tracking). Grey literature and official reports came from the following sources:

- National Health Authority (NHA): PM-JAY annual reports, operational guidelines and dashboards
- Insurance Regulatory and Development Authority of India (IRDAI): annual reports, 2020-21 to 2024-25
- National Health Accounts: estimates from 2016-17 to 2022-23
- National Sample Survey Office (NSSO): 75th round (2017-18) on health and social consumption
- World Health Organization: Global Health Observatory and India-specific reports
- NITI Aayog: policy papers on health financing and the "missing middle"

Eligibility criteria

Inclusion

- English-language studies published between 2016 and 2026
- Quantitative, qualitative or mixed-methods studies of PM-JAY or private health insurance in India, at national, state or district level
- Outcomes on hospital revenue, OOPE, catastrophic health expenditure, or quality indicators (mortality, readmission, patient satisfaction) in tertiary hospitals
- Government reports, policy documents and official statistics from the NHA, IRDAI, National Health Accounts and NSSO

Exclusion

- Studies published outside the 2016–2026 window
- Commentaries, editorials and opinion pieces without primary data
- Studies of primary care or non-tertiary settings only
- Studies from outside India, or multi-country studies without India-specific data
- Duplicate publications and overlapping datasets

Selection and data extraction

Two reviewers independently screened titles and abstracts against the eligibility criteria and then assessed the full texts of potentially eligible studies. Disagreements were settled by discussion or, where needed, by a third reviewer. Data were extracted with a piloted form covering study characteristics (author, year, design, setting), population, intervention (PM-JAY or private insurance), comparators, outcomes and main findings.

Quality assessment and synthesis

Methodological quality was assessed with the Mixed Methods Appraisal Tool for mixed-methods studies [13] and the Joanna Briggs Institute checklists for observational studies [14]. Because designs and outcome measures differed widely, we did not attempt a meta-analysis. Instead, findings were synthesised narratively under three pre-specified themes: (A) hospital revenue, (B) OOPE and (C) quality of care.

Results

The search identified 847 records, of which 38 sources met the inclusion criteria after screening and full-text assessment: 22 peer-reviewed articles, 10 government reports (NHA, IRDAI, NSSO) and 6 policy documents. The studies covered 18 Indian states, with Gujarat, Madhya Pradesh, Uttar Pradesh and Maharashtra most heavily represented. Sample sizes ranged from 150 to 56,722 households. Designs included cross-sectional surveys, cohort studies, mixed-methods evaluations and secondary data analyses.

Theme A: Hospital revenue

PM-JAY

By 31 August 2026, PM-JAY had funded 13.25 crore admissions worth ₹2.03 lakh crore through more than 38,000 empanelled public and private hospitals [5]. On these figures the scheme has become a substantial source of income for empanelled hospitals. Hospital-level financial evidence is much thinner, however, and much of what exists rests on scheme-level expenditure data rather than hospital accounts.

Package rates have been a recurring source of friction. A national costing study led to an upward revision of rates from January 2020, covering 61% of packages [15,16]. Even so, a systematic review of the scheme found that private hospitals were dissatisfied with low package rates and delays in claim reimbursement [8]. The same review called for provider training and attention to infrastructural gaps [8].

Private insurance

Insurers collected ₹1,27,417 crore in health premiums in 2024-25 and handled 3.26 crore claims worth ₹94,247 crore [6]. These are sector-wide figures. None of the sources we reviewed reported what share of a tertiary hospital's revenue comes from private insurance compared with PM-JAY, so we do not offer a comparison of revenue shares.

Comparative observations

Reports of reimbursement delay relate mainly to PM-JAY. We found no source that measured payment turnaround for PM-JAY and for private insurers in the same way, and we therefore make no like-for-like comparison of delays. The clearest comparative point is structural: PM-JAY pays fixed package rates set by the government, so hospitals' concerns centre on whether those rates cover the cost of complex care.

Theme B: Out-of-pocket expenditure

Trends in national data

In the National Health Accounts, the OOPE share of THE fell from 64.2% in 2013-14 to 39.4% in 2021-22, and then rose to 43.4% in 2022-23 [1,17]. Over the same period the government share of THE rose from 28.6% to 43.7%, social security expenditure (which includes PM-JAY) rose from 6.0% to 9.9%, and private insurance rose from 3.4% to 9.2% [1]. The fall in OOPE coincides with PM-JAY's expansion, but national aggregates cannot show how much of it is due to the scheme, and the 2022-23 rise shows that the gain is not secure.

Household-level studies of PM-JAY

Household-level results are mixed. A six-state study reported that patients who were able to use the scheme were 21% less likely to incur catastrophic expenditure, although PM-JAY did not increase hospitalisation [18]. In Chhattisgarh, a survey one year after launch found no improvement in access or financial protection [19]. A later evaluation, after four years and a rise in reimbursement rates, again found that enrolment was not associated with lower OOPE or CHE; among enrolled patients who used private hospitals, 78.1% (2021) and 70.9% (2022) incurred CHE at the 10% threshold, and mean OOPE in private hospitals was about ten times that in public hospitals [16]. A cross-sectional study of 200 beneficiaries in two states in 2019 similarly documented out-of-pocket payments in private hospitals [20]. Systematic reviews of public-funded insurance in India have generally found gains in financial protection to be limited [9,10].

Private insurance

Private insurance finances a small share of national health spending (9.2% in 2022-23) [1], and premiums remain out of reach for many households above the PM-JAY eligibility line [7]. We found no national evaluation of its effect on household OOPE that is comparable to the PM-JAY studies above, and so cannot say whether private cover protects households better than PM-JAY.

Persistent out-of-pocket costs

PM-JAY covers hospitalisation only. Outpatient consultations and medicines, transport, food and lost wages remain the household's responsibility, and the Chhattisgarh study found that some private hospitals took co-payments despite contractual prohibitions [16]. In the NSS 75th round, catastrophic spending on hospitalisation affected 20.4% or 10.0% of households, depending on how household consumption was defined, and burdens were higher in private than in public facilities [2].

Theme C: Quality of care in tertiary hospitals

Measurement under PM-JAY

In 2023 the NHA announced a value-based framework that grades empanelled hospitals on five indicators: beneficiary satisfaction, readmission rate, out-of-pocket expenditure, confirmed grievances and improvement in health-related quality of life [21]. Independent evaluation has lagged behind. The four-year Chhattisgarh study was among the first to test the scheme's effect on quality; it found that enrolment was unrelated to patient satisfaction or length of stay, and that stays were longer in private

hospitals regardless of enrolment [16].

Private hospitals and public hospitals

The same study reported that private hospitals continued to overcharge enrolled patients and that contracting had not been effective in regulating provider behaviour [16]. Reviews of provider experience also point to documentation demands and infrastructural constraints [8]. We found little published evidence comparing mortality or complication rates in empanelled and non-empanelled hospitals.

Monitoring gaps

Published outcome data, such as risk-adjusted mortality, readmission and patient-reported outcomes, are scarce for PM-JAY. For private insurance the position is similar: insurers do not report standardised hospital-level outcomes, and hospital accreditation is generally used as a proxy for quality.

Comparison of public and private health insurance

Table 1 summarises the main points from the sources above. Cells marked as not identified indicate that we found no source reporting the measure in a form that could be compared.

Table 1. Public (PM-JAY) versus private health insurance: summary of key indicators

Indicator	PM-JAY (public)	Private health insurance
Scale and funding	Government-funded; ₹2.03 lakh crore across 13.25 crore admissions (to 31 August 2026) [5]	₹1,27,417 crore in premiums (2024-25, +9.19%); 3.26 crore claims settled [6]
Population reach	More than 48.51 crore card holders, about 33% of the population (21 September 2026)	Financed 9.2% of THE in 2022-23 (3.4% in 2013-14) [1]; gap for the “missing middle” [7]
Provider payment	Fixed package rates; revised upwards from January 2020 [15]; providers report low rates and delayed claims [8]	Not identified in a comparable form
Effect on household OOPE	Mixed: 21% lower CHE in a six-state study [18]; no significant effect in Chhattisgarh [16]	No comparable national evaluation identified
OOPE share of THE (national)	Not scheme-specific: 64.2% (2013-14), 39.4% (2021-22), 43.4% (2022-23)	Not scheme-specific
Quality monitoring	Five-indicator value-based framework announced 2023 [21]; independent evidence limited [16]	No standardised outcome reporting; accreditation used as proxy

Discussion

This review brings together a decade of evidence on how public and private health insurance in India relate to hospital revenue, household OOPE and quality of care in tertiary hospitals. Three findings stand out. PM-JAY has changed how hospitals are paid for a very large volume of care. The evidence that it has reduced household OOPE is more mixed than its scale might suggest. And direct comparisons with private insurance are rare, so most of what can be said about the two is indirect.

Hospital revenue and financial viability

PM-JAY is now a major payer for empanelled hospitals [5]. For private hospitals, the main concerns are whether package rates cover the cost of complex procedures and how quickly claims are paid [8]. The 2020 rate revision responded to the first concern [15], but the Chhattisgarh findings suggest that higher rates alone did not stop overcharging of patients [16]. Payment reliability matters because it affects whether hospitals stay in the scheme, yet our sources did not allow us to quantify hospital-level revenue or compare payment delays with those of private insurers. That is a real limit on what this review can say about financial viability.

OOPE and financial protection

The national data are encouraging up to 2021-22 and then less so. The OOPE share of THE fell by about 25 percentage points before rising again in 2022-23 [1]. Household studies of PM-JAY are split, and the most consistent message is that where a patient is treated matters at least as much as whether the patient is insured: private-hospital use was linked to catastrophic spending whether or not patients were enrolled [16]. This pattern fits the wider concern that insurance alone cannot deliver financial protection when providers can charge above the agreed price [16]. Uncovered costs, such as outpatient medicines, diagnostics and transport, add to the burden. Private insurance offers an option for households above the PM-JAY threshold, but it finances a

small share of national spending, and the "missing middle" remains a policy gap [7].

Quality of care

The NHA has moved towards measuring quality and linking it to hospital grading [21], which is a sensible direction. So far, however, the independent evidence is limited to a few indicators, and the one four-year evaluation we identified found no effect of enrolment on patient satisfaction or length of stay [16]. Without routine, risk-adjusted outcome data, it is not possible to say whether quality differs between PM-JAY and privately insured patients, or between public and private hospitals within the scheme.

Policy implications

Four priorities follow from the evidence. First, payment to hospitals should be prompt and predictable, and package rates should continue to be revised against cost data [15]. Second, co-payments and balance billing by empanelled private hospitals need stronger enforcement, since these directly undermine financial protection [16]. Third, quality indicators should be published routinely so that hospital performance can be compared. Fourth, for the "missing middle", options such as income-linked subsidies or employer-based coverage deserve evaluation before large-scale adoption [7].

Limitations

This review has several limitations. The included studies differ widely in design, outcome definitions and setting, which ruled out meta-analysis. They are concentrated in a few states, and many rely on self-reported OOPE. Official figures for PM-JAY and the insurance sector are administrative and were not independently verified, and they refer to different dates. Few studies compare PM-JAY and private insurance directly, so cross-scheme comparisons here are indirect and should not be read as causal. Longitudinal studies with objective financial and clinical outcomes are needed.

Conclusion and Policy Recommendations

PM-JAY has extended cashless hospital cover to a very large share of the population: more than 48.51 crore card holders and ₹2.03 lakh crore of treatment funded by 2026 [5]. What the evidence does not yet show is that this coverage has consistently reduced what households pay. National OOPE shares fell to 39.4% in 2021-22 before rising to 43.4% in 2022-23 [1], and household studies range from modest protection to none, with private-hospital care the main source of high spending [16,18]. Private insurance is growing (₹1,27,417 crore in premiums in 2024-25) [6] but finances a small share of health spending and complements, rather than substitutes for, publicly funded cover.

Policy recommendations

1. Speed up and standardise claims payment. Set clear payment timelines for empanelled hospitals, backed by automated adjudication and monitoring of delays.

2. Keep package rates cost-based. Revise rates periodically using costing evidence, with particular attention to high-cost specialties such as cardiac care, oncology and neurosurgery.

3. Enforce rules on co-payments and balance billing. Strengthen audits, patient grievance channels and penalties for empanelled hospitals that charge enrolled patients.

4. Publish quality data. Report risk-adjusted mortality, readmission and patient-reported outcomes for empanelled hospitals, and consider linking part of payment to them.

5. Evaluate options for the "missing middle". Assess income-linked subsidies, tax incentives and employer-based coverage, and study how public and private cover could be better coordinated.

With these steps, India can build on PM-JAY's reach while using private insurance where it adds protection, and move towards a financing system that is more equitable and sustainable.

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