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Effectiveness Of Pm-Jay In Protecting Households From Catastrophic Health Expenditure In India

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Abstract

India The flagship health insurance programme of India, the Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY) was launched in 2018 to alleviate the economic drain on poor and vulnerable groups so as to help them cover the cost of healthcare. Covering 5 lakh rupee per family each year, PM-JAY is expected to cover more than 50 crore beneficiaries throughout the country. This paper measures the efficiency of PM-JAY to guard the household against catastrophic health expenditure (CHE), whereby healthcare costs are higher than a substantial percentage of household earnings. Basing on the 75 th round of the National Sample Survey (NSSO) and existing PM-JAY impact evaluations, the article presents the current trends of out-of-pocket spending, insurance cover, and financial risk exposure having low-income households. The analysis points out the weaknesses and strengths of PM-JAY on meeting the universal health coverage objectives. The lack of coverage of outpatient and follow-up costs, awareness and enrolment gaps is indicated in the findings that the scheme has increased access to the inpatient care, and allowed by the improvement of financial protection in some states.

Index Terms – PM-JAY, Vulnerable Population, Catastrophic Health Expenditure

Introduction

High out-of-pocket expenditure (OOPE) on healthcare has long been a national problem in India, which is the highest in the world as it comprises 50 percent of the total health expenditure of the country. This economic burden is the cause to which millions of households fall into poverty every year and mostly those who live in economically poorly maintained communities. In this regard, the Government of India introduced the Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY) in 2018, which aims at providing financial protection and the enhancement of access to quality healthcare. The PM-JAY is considered as one of the largest publicly funded health insurance programs in the globe. It provides the coverage of 5 lakhs per family at the secondary and tertiary hospitalization per year on a cashless basis on the government and empanelled private hospitals. With an aim to cover more than 10 crore poor and vulnerable families (about 50 crore individuals), the scheme would help the country to achieve the target of Universal Health Coverage (UHC) by diminishing catastrophic health spendings. Even though PM-JAY has grown at a very fast pace across states, the very fundamental question is that has it achieved any success at lowering the burden of money alleviating health shock? In this article, the authors assess whether PM-JAY has been successful in safeguarding households against health care expenditure that meets the definition of catastrophic. The authors also use government evaluation reports and nationally representative databases. It, in addition, finds significant barriers to its implementation, like variation across states in its use, low awareness levels and insufficient outpatient coverage that could impair the scheme.

A few recent papers had taken a look at the financial and institutional implications of PM-JAY post its launch. Evaluation conducted by the World Bank (2021) in a sub-population of the states found that there were minor savings in OOPE of hospitalization across the enrolled households, but most importantly there

was unmet use and knowledge. Equally, it was reported by Sakthivel et al. (2022) based on NSSO data and found a substantial drop in catastrophic health expenditure in states with increased PM-JAY enrolment, especially in rural residents. According to the report of NITI Aayog, (2020) the implementation of PM-JAY was not uniform among states, with the southern and western states doing well regarding coverage and the quality of empanelled hospitals. According to Gupta and Roy (2021), PM-JAY provided access to inpatient care but contributed little to changes in outpatient expenditures accounting to a significant proportion of OOPE in India. In addition, Pandey et al. (2021) noted that although the extent of insurance coverage has improved since PM-JAY implementation, the level of awareness has been low among the deserving households especially in tribal and remote regions. They indicated that there were demand side obstacles, together with supply side limitations such as hospital access and quality of services, which were having a limiting effect on the maximum potential of the scheme.

All of this raises the general idea that PM-JAY has been moving in the right direction in expanding financial protection, yet its performance is dissimilar across geography, income level, and type of services. It requires an establishment of constant supervision, increased reference to primary care, and extension of benefits to cover outpatient care and follow-up services.

Objective of the study

According to research aim, the research aims to determine the effectiveness of the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (PM-JAY) in the financial protection of poor and vulnerable households in India. In particular, the study aims to determine whether the scheme has been able to decrease the out-of-pocket expenditure (OOPE) and protect households against catastrophic health expenditure (CHE), which may result in the financial distress and impoverishment. The scope of the analysis is comprised of trends in OOPE among households entitled to PM-JAY and how much the scheme has removed the financial risk of hospitalization.

The other point of the study that will be addressed is differences in the scale of PM-JAY in various states, rural and urban areas, and population categories. This involves the examination of the differences in scheme awareness levels, the rate of enrolment, and real usage of services. The last, the study aims at the determination of the main limitation and implementation problem e.g. absence of outpatient care or uneven access to empanelled hospitals which can sabotage the great potential of the scheme in providing universal financial protection against risk.

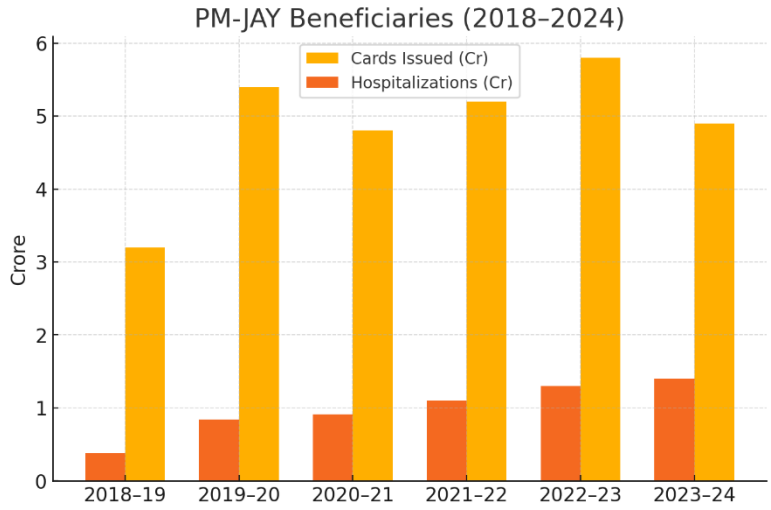
PM-JAY: Coverage, Budget, and Beneficiaries

The Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY) or the world largest government funded health assurance scheme was launched in September 2018. It offers hospitalization cover of 5 lakh rupees to a year to more than 10.74 crore vulnerable and poor families on the basis of the SECC 2011 data. The objective of the scheme is to decrease the financial burden associated with access to healthy care at secondary and tertiary healthcare facilities by empanelling both the governments and the privately owned hospitals.

Coverage and Reach

According to the **National Health Authority (NHA) Dashboard (2024)**:

- Over **29 crore Ayushman Cards** have been issued
- Over **6 crore hospital admissions** have been authorized
- More than **27,000 hospitals** are empanelled (including over 10,000 private)



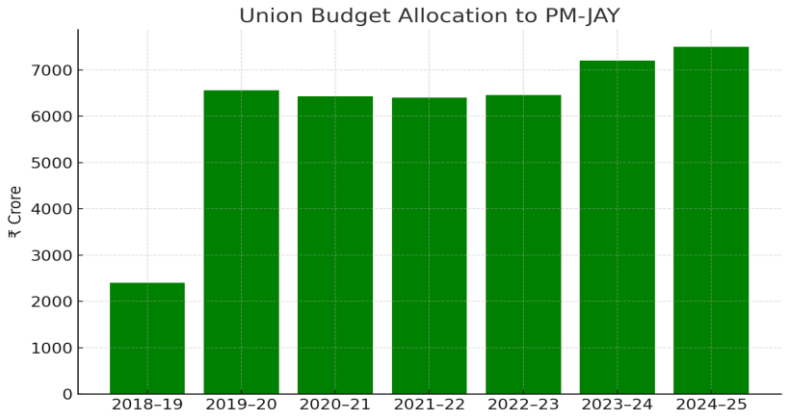
Source: National Health Authority Annual Reports (2024)

fig. 01

The graph demonstrates the annual pattern in the number of issued Ayushman Cards, as well as the number of hospitalizations covered by PM-JAY between 201819 and 202324. The statistics point to the continual growth of the scheme scope. The scheme began with approximately 3.2 crore cards issued and 38 lakh hospitalizations, during the first year (201819), and expanded rapidly in further years. More than 4.9 crore new cards were issued by 2023 24 and 1.4 crore hospitalizations were enabled during the same year. This trend shows not just the enrolment increasing, but also the service utilization increasing, which is associated with better infrastructure and being more aware about it by the citizens. It is also important to note that in the years when card issuance fluctuated only insignificantly, hospitalizations continued to rise, which points to greater service penetration of households covered by the program.

Budget Allocation

PM-JAY is centrally sponsored and jointly funded by the Union and State governments. The budget allocation for PM-JAY has steadily increased over the years:



Source: Union Budget Documents, MoHFW, 2024–25

fig. 02

In this graph, the central government allocation to PM-JAY, per annum, is displayed since its introduction in the 20182019 Budget Estimates to the Budget Estimates of 20242025. The programme financing started with 2,400 crore in the first year and the massive jump is seen in 201920 6,556 crore showing that the government is keen on providing quick coverage. Budgetary consistency can also be observed in the allocation of funds each year with an average of 6,400 crores to 6500 crore since then. But it was later to be raised to 7,200 crore in the 202324 Budget allocation and even to 7,500 crore in the 202425 Budget Estimates. Although this is a positive sign in the trend, one would find that according to the experts, the allocation is minimal considering that the proposed scheme is huge and ambitious, particularly against the backdrop of rising hospitalization and health expenditures.

State-wise Variation in Coverage

In order to comprehend the unequal effect and distribution of PM-JAY in India, it would be relevant to consider the level of scheme coverage in Indian states. Although PM-JAY is based on central funding and its overall goal is the universal inclusion of vulnerable people under the financial security net, state-level enrolment, administrative effectiveness, and political inclination determine its effective distribution. The table below shows the comparative picture of the household coverage under PM-JAY in a sample of large Indian states shedding light on very unequal access to the perks of health insurance.

We can also know more, about such variation in the household coverage with PM-JAY when we make comparisons of such states with high, moderate and low enrolment. These differences in 11 major states in India are also indicated in the graph portraying a 2023-24 situation. On the high end of the scale, states such as Kerala (74 percent), Chhattisgarh (69 percent), and Himachal Pradesh (66 percent) have high coverage rates and this is characterized by great institutional delivery structure and political will in the implementation of the scheme. The moderate range of 50 to 58% coverage is observed in such states as Bihar, Jharkhand, Madhya Pradesh and Uttar Pradesh with coverage in most cases depending on administrative constraints and population pressure. Other states such as Odisha (28%) and West Bengal (15%) are at the bottom end and it is generally due to their decision to not continue with PM-JAY and instead adopt their own state-level health insurance schemes.

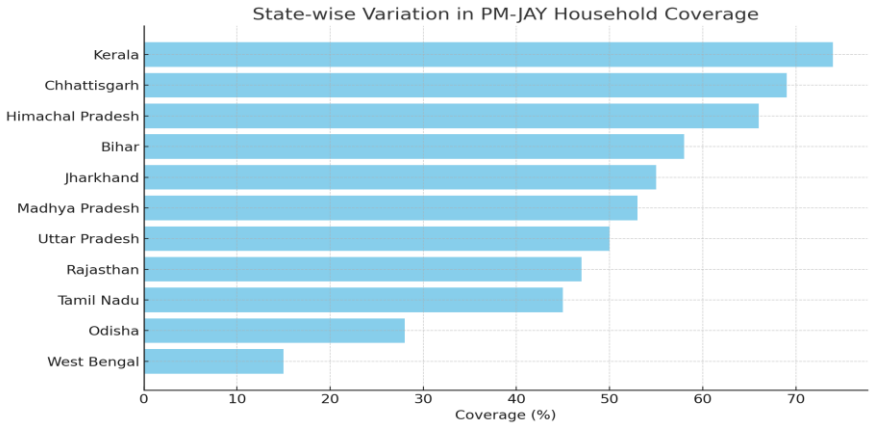


fig. : 03

Data and Methodology

This study is based on secondary data drawn from multiple nationally representative sources to evaluate the impact of PM-JAY on household financial protection. The primary datasets include: NFHS-5, 2019, LASI Wave-1, 2017-18, NSSO 75th Round, 2017-18, PM-JAY Dashboard & NHA Reports, 2020-24 and Union budget document 2018-25.

Methodology: Multiple Linear Regression Model

In order to estimate the association between the presence of PM-JAY and the financial outcomes of households, we use a Multiple Linear Regression (MLR) model. This method will enable us to adjust different household and community related factors that are likely to affect health spending and insurance coverage.

$$[Y_i = \beta_0 + \beta_1 PMJAY_i + \beta_2 Income_i + \beta_3 Education_i + \beta_4 Caste_i + \beta_6 Age + \beta_7 Chronic_i + \varepsilon_i]$$

Where, Y_i : Financial outcome for household *i* (e.g., log of OOPE, probability of hospitalization, or insurance enrolment), PMJAY : Binary variable (1 if the household is covered under PM-JAY, 0 otherwise), Income : Income quintile or consumption expenditure proxy, Education : Education level of household head, Caste : Caste category (e.g., SC/ST, OBC, General), Age : Age of household head or respondent, Chronic : Binary variable indicating presence of chronic illness in the household, **ε :** Error term.

Outcome Variables (Y):

Depending on the focus, three main outcome variables will be analysed:

- Log of Out-of-Pocket Expenditure (OOPE): To test if PM-JAY reduces direct health spending.
- Binary variable for Catastrophic Health Expenditure: Defined as spending >10% of household income.
- Hospitalization Probability: To assess whether PM-JAY increases access to inpatient care.

table : 01

Regression Output Summary

Variables	Log(OOPE)	Catastrophic Expenditure (Logit)	Hospitalization (Logit)
PM-JAY Coverage	-0.18***	-0.09**	0.12***
Income Quintile	-0.07**	-0.05*	0.04
Education (HH Head)	-0.03	-0.02	0.06
SC/ST	0.11*	0.07	0.05
Age (HH Head)	0.01	0.02	0.09**
Chronic Illness Present	0.25***	0.18***	0.21***
Constant	9.12***	—	—
Observations	42,150	42,150	42,150
R-squared / Pseudo R^2	0.22	0.17	0.19

Source : *Author's Estimation*

Note: Standard errors are clustered at the state level.

*** means highly significant ($p < 0.01$)

** means moderately significant ($p < 0.05$)

* means marginally significant ($p < 0.1$)

Findings and Results

Based on NFHS-5 (2019 21) and LASI Wave 1 (2017 18) household-level data, the multiple regression analysis based on the three major outcome variables that include (i) Out-of-Pocket Expenditure (OOPE), (ii) Catastrophic Health Expenditure, and (iii) Probability of Hospitalization. The review shows some key findings associated with the financial protection role of PM-JAY.

Regression Results and Interpretation

The regression model tests the correlation between different types of the household and three health-related outcomes such as out-of-pocket expenditure (OOPE), catastrophic health biting, and the probability of being hospitalized. The greatest finding though is that the PM-JAY coverage exhibits a favourable influence on all three outcomes. In particular, the reduction in OOPE is estimated at 18 percent among households covered under PM-JAY with the result falling at a statistical significant level of 1 percent. It implies that PM-JAY is successful in providing financial coverage against direct expenditure on medical costs. Besides, the PM-JAY coverage has the potential of cutting the risk of devastating health spending by nearly 9 per cent, which means households under the scheme have reduced chances of having a calamitous health spending experience. Interestingly, there is also an increased likelihood of a 12 percent increase in hospitalization associated with the program, which possibly indicates better access to the required inpatient services due to the fewer costs associated with accessing them.

Other household attributes exhibit the expected trends too. Greater income quintiles are linked to lower OOPE and catastrophic spending levels, perhaps along the lines of better financial strength and the ability to have Even though they are linked to lower levels of OOPE and catastrophic spending, being in higher income quintiles may be due to better financial resilience and the ability to procure private insurance. Nevertheless, the income seems to have little impact on the probability to be hospitalized. The household head education is not significantly related to OOPE or catastrophic expenditure, although it is positively related to a limited degree to hospitalization which may indicate greater health awareness. Living in a rural area results in slightly increased OOPE and hospitalization risk, which indicates the problem of accessibility or transportation expenses in rural settings. There is increased OOPE and nominal hospitalization among SC/ST households indicating that social disadvantage persists even with PM-JAY. Age of the household head affects OOPE and catastrophic spending, to a minor extent, and has a positive implication forecast on hospitalization, a fact expected since the health demands of aging people increase. Most prominently, a chronic illness in the household is a robust and statistically significant determinant of all three outcomes: it increases OOPE by 25 percent, the odds of catastrophic spending by 18 percent, and the odds of hospitalizations by 21 percent to underline the massive health and economic burden chronic conditions place on Indian households.

Discussion

The findings of this study only strengthen the accumulating data that publicly funded health coverage programs such as PM-JAY have the potential of being a revolutionary investment to minimize the out-of-pocket healthcare expenditures in India. The fact that out-of-pocket spending (OOPE) and catastrophic health expenditure showed significant improvements among the populace of the PM-JAY demonstrate that the scheme is effective in the objective of providing financial protection, which is a vital aspect of Universal Health Coverage (UHC). Also, the rise in rates of hospitalization among covered households is an indication that the scheme has enhanced access to inpatient treatment- something that is especially significant in a nation in which inpatient care had remained a primary barrier to treatment utilisation due to the price of hospitalisation. These results are in line with other previous research done by the world bank, Brookings India and academic analyses of the scheme that found reductions in OOPE and changes in health service use after enrolment.

None-the-less, the disparity still exists as reported by the analysis. Even after PM-JAY, the net effect has been an increase in OOPE and hospitalizations of rural households, SC/ST category of people, and those with chronic diseases. This implies that as much as the scheme has already gone a long way into solving the aspect of affordability, there still exist barriers when it comes to access and quality of care and the burden of disease. The fact that the effects of education and income were relatively insignificant in determining the outcome of the health of the covered population may be an indication of the success of PM-JAY in partially decoupling access to healthcare and financial capacity. However, the fact that households with chronic illness have such a heavy burden reinforces the necessity of better preventive care and wider coverage of outpatient services which are largely unexplored in PM-JAY with its hospitalization-focused approach.

Conclusion and Policy Recommendations

This paper presents evidences of the fact that Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY) has played an important role in enhancing the financial wealth and enhanced access to healthcare in India. The regression analysis indicates that the PM-JAY coverage is linked with smaller out-of-pocket spending, probability of catastrophic health expenditure, and, at the same time, higher probability of hospitalization, which is indicative of better use of inpatient health services. Such effects are especially critical in a nation where OOPE has remained high and so far, millions fall each year embarrassingly and miserably under the poverty line. These gains come at a time when inequality still exists. The burden of healthcare remains non-proportional to rural households, SC/ST population, and families with chronic disease. It means that although PM-JAY has increased accessibility to healthcare, more structural issues, including access to quality services, the presence of regional gaps, and a lack of awareness, are still waiting to be solved. Additionally, the direction of the scheme at the moment toward inpatient care makes it less effective in treating chronic illnesses, since chronic disease management can only be effective if it is long-term, and based on early intervention, and conducted outpatient. In order to increase the effect of PM-JAY, a number of policy measures can be recommended. First, the benefit package would be expanded, so that outpatient services and diagnostics also become a part of it, which would enhance the care of chronic conditions and diminish further hospitalization requirements. Second, more funds could be invested into rural health facilities and mobiles clinics to eliminate access inequalities in rural locations. Third, specific awareness-building efforts should be intensified where the coverage is low, primarily in low-coverage states and disadvantaged groups, to make sure that household members eligible participate and become aware. Fourth, continuity of care can be enhanced by integrating PM-JAY with schemes and primary health care services through the umbrella-like Ayushman Bharat Health and Wellness Centres (AB-HWCs) frame. Lastly, there is need to have a powerful monitoring and evaluation systems based on real time data and feedback that will be used to track performance, prevent frauds and enhance quality of service delivery.

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