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The Performance of Pradhan Mantri Jan Arogya Yojana (PMJAY) in a District of Uttar Pradesh: A descriptive study

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ABSTRACT

Introduction: The government of India launched the Pradhan Mantri Jan Arogya Yojana (PMJAY) in September 2018, a health insurance scheme to protect poor households (40% of the population) from hospital expenses. This was a step towards achieving universal health coverage in India. **Aims & Objective:** This study aims to examine the performance of the PMJAY scheme in a district of UP. **Methodology:** The schemes' programme data was analyzed to assess the performance in terms of coverage, enrolment and utilization of the scheme. **Results:** In the study district, only 16.5% of the population was registered in the PMJAY list. Of these 16.5%, only 4.1% were provided with a PMJAY card. Among the cardholders, 14% were admitted and benefited from the scheme during the period April 2021 till March 2022.**Conclusion:** The registration of beneficiaries and their enrolment were low in this district. Utilization of the scheme is high, probably because of adverse selection.

Keywords: PMJAY, GFHI, health insurance, performance, coverage, enrolment, and utilization.

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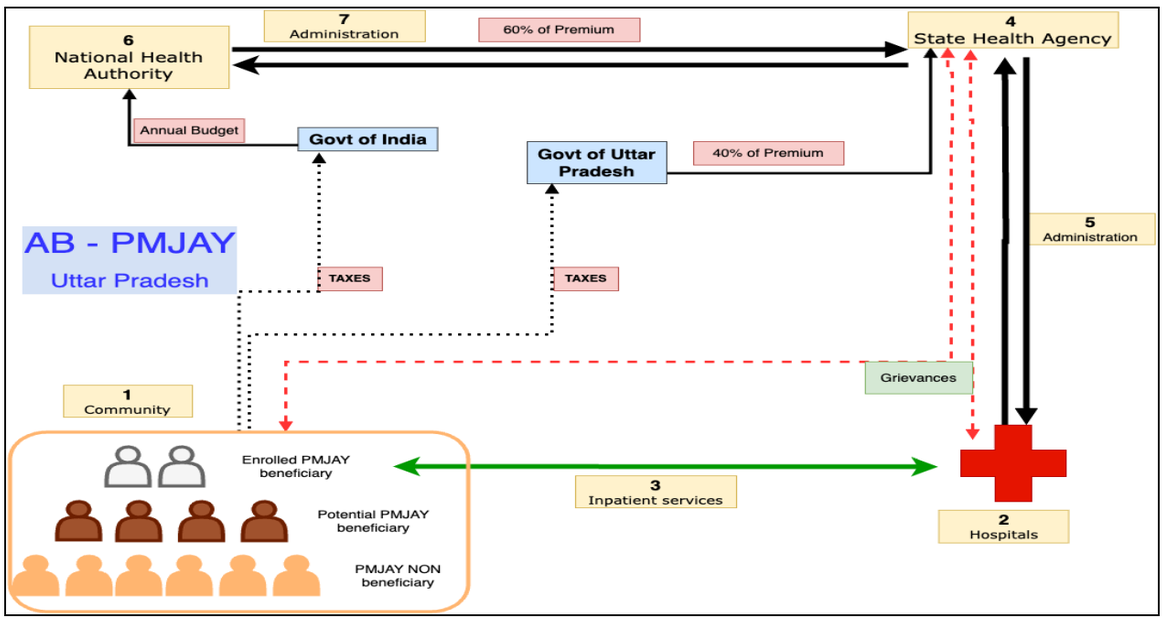
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Introduction

Sustainable Development Goal 3 (SDG) aims to "ensure healthy lives and promote well-being". One of the targets of SDG is to "achieve universal health coverage" (UHC).[1] The government of India is a signatory to these goals and has incorporated them into its health policy[2]. Section 2.3.1 of the national health policy 2017 clearly states that India aims to ***"Progressively Achieve Universal Health Coverage"***. As per a WHO report, the main barrier to achieving UHC for India is the high out-of-pocket expenses (OOPE) incurred by individual households at the point of care[3].

To reduce the burden of OOPE and achieve UHC, the government of India launched the Rashtriya Swasthya Bima Yojana (RSBY) in 2008[4]. The RSBY later evolved into the Pradhan Mantri Jan Arogya Yojana (PMJAY) in 2018[5]. The PMJAY, a government-financed health insurance scheme (GFHI), was introduced with the aim to protect the poor and vulnerable patients from high out-of-pocket expenditures at the time of hospitalization. At the launch, in 2018, 40% of the country's population, i.e., more than 500 million individuals, were eligible to benefit from this scheme[6].

Figure-1: Diagrammatic representation of the PMJAY operational in UP



Created by: The authors. **Source:** The National Health Authority (https://nha.gov.in/PM-JAY)[6].

1. **The Community:** The eligible beneficiaries for the scheme were identified using the Socio-Economic and Caste Census (SECC) of 2011. Those families who had a deprivation score of 13 or less were eligible to enrol in the PMJAY. To enrol, the eligible beneficiary must visit the nearest empanelled health facility and register using the Beneficiary Identification System (BIS). On enrolment, each individual beneficiary is provided with a PMJAY card. Subsequently, the UP Government increased the number of eligible beneficiaries by including people from other sections of society: the destitutes under the Antyodaya Anna Yojana (AAY), the workers registered with the Building and Other Construction Workers (BOCW) board, and existing members of the Mukhya Mantri Jan Arogya Abhiyan (MMJAA).

2. **The Hospitals**: All government facilities from the Primary Health Centres (PHC) to the medical colleges are automatically empanelled under the PMJAY. Only those private hospitals that had the necessary infrastructure, equipment, human resources and agree to abide by the PMJAY guidelines are empanelled by the scheme. A total of seven government hospitals and 35 private hospitals were empanelled as of 31st March 2023.

3. **Healthcare Services:** The enrolled patient needs to visit an empanelled hospital with the PMJAY card. If hospitalisation is recommended by the medical officer, the patient approaches the PMJAY kiosk to validate his/her card. Once confirmed, the patient is entitled to free and comprehensive hospitalisation services. These include but are not limited to pharmaceuticals, consumables, diagnostic services, physicians', nurses' and surgeons' fees, and bed charges. A total of 1,949 treatment procedures is listed for free treatment. Medical expenses three days before hospitalisation and up to 15 days after hospitalisation were also reimbursed by the government.

4. **The State Health Agency (SHA):** The UP SHA is the nodal entity that manages the PMJAY in the state. This is a semi-autonomous unit within the Department of Health and Family Welfare, whose main role is to implement the scheme as per the guidelines provided by the National Health Authority.

5. **Administration***:* The SHA's main roles are (1) to promote the enrolment of eligible beneficiaries, (2) empanel hospitals, (3) authorize admissions and treatment plans of PMJAY patients[1], (4) review and reimburse the claims made by the hospitals, (5) address grievances, and (6) finance the scheme. The SHA contributes 40% of the total costs of the PMJAY scheme in the state. It reimburses the hospitals based on a flat fee for each of the packages. All this is managed by a team at both the state capital and district level, using a dedicated digital management information system.

6. **The National Health Authority (NHA):** The NHA is an autonomous entity that is responsible for implementing the PMJAY at the national level. Its main role is to provide stewardship and technical assistance to the SHAs and to finance the remaining 60% of the scheme costs.

Studies from across the country have shown a mixed picture about the performance of the PMJAY. We discarded many hospital-based studies, as these did not represent status at the community level[7]. Community-based cross-sectional studies indicate that the awareness about the scheme ranged from 62% in six states of India to 72% in Gujarat[8,9] Two large cross-sectional studies, one in six different states[10] and the other in Chhattisgarh[11] documented utilization rates ranging from 3.6% to 6%. Both studies note that patients used the private hospitals more than the government hospitals. The Chhattisgarh study also found that the median out-of-pocket expenses among PMJAY patients using private hospitals was Rs.7,299, while it was Rs 8,759 for non-PMJAY patients using private hospitals[11]. The main purpose of this study is to assess the performance of the PMJAY scheme in terms of coverage, enrolment, and utilization of the scheme in a district of UP using the scheme's own programme data. This is one of the first studies of its kind using the methodology of programme data analysis for a rapid assessment of the PMJAY's performance.

Materials and Methods

Study Design: We used a case study approach to examine the performance of the PMJAY in detail in a single district in UP. The present study used an observational descriptive design using data from the PMJAY database. We measured the performance of the PMJAY using key indicators like coverage rate, enrolment rate and utilization rate. We defined "coverage rate" as the percentage of the population who are eligible to enroll in the scheme as per the SHA, "enrolment rate" as the percentage of eligible individuals who have a PMJAY card, and "utilization rate" as the percentage of enrolled individuals who were hospitalized in an empanelled hospital during the period 01/04/2021 to 31/03/2022.

Data collection and analysis: After receiving permission from the SHA & DIU, we were allowed to peruse the PMJAY database of the study district. This database had the list of eligible families as per the SECC 2011, the list of families who had enrolled, the number of patients admitted and the number of claims made and reimbursed during the study period. We extracted the data for the period 01/04/2021 till 31/03/2022 and cleaned and analysed the data using MS Excel.

Study setting: Uttar Pradesh (UP) is the most populous state in India. As per the government of India's report, UP would have had a projected population of 23.1 crore in 2021[12]. The health indicators in UP have been consistently lower than the country's average (Table 1)[13–15]. We used convenience sampling to select a district out of the 75 districts in UP. This district had a population of 46.8 lakhs in 2011, 67.6% of whom lived in urban areas[16].

Table-1: Select health indicators of India, UP and the study district.

Indicators	India	UP	Study district
Infant mortality rate (infant deaths per 1,000 live births)	26	38	NA
Maternal mortality ratio (maternal deaths per 1,000 live births)	88	141	NA
Institutional Births (%)	89%	83%	86%
Full Immunization (12-23 Months)	76%	70%	69%

[1]All hospitals, before they admit PMJAY patient, needs to get approval from the SHA. The hospital submits a Preauthorization Initiation Requests in the Transaction Management system (TMS). This step involves submitting the documents to establish the patient's diagnosis and justify the treatment. This request is reviewed and approved by the medical professionals at the SHA. Once the preauthorization is granted, the hospital can proceed with the cashless treatment.

Ethical approval for the study: The study was given ethical clearance from Santosh Deemed to be University. For ethical reasons, to maintain anonymity of the respondents, we have decided not to name the district in the article.

Use of Artificial Intelligence: Artificial intelligence tools were not used in this study.

Results

Coverage of PMJAY Beneficiaries: The population of the study district (as per the 2011 census) was 46.8 lakhs. As per the PMJAY norms, 40% of this population are eligible to enroll in the scheme. However, in the study district, the DIU's list of eligible beneficiaries had the details of only 7.7 lakh individuals (16.5%). The coverage in Uttar Pradesh was found to be higher, 38.3% and closer to the norms (Table 2).

Table- 2: Coverage of PMJAY Beneficiaries in UP and in the study district as of August 2022

Indicators	UP	Study district
Total population (2011)	19,98,12,341	46,81,645
Estimated number eligible for enrolment under PMJAY (40% of the population as per norm)	7,99,24,936	18,72,658
Number of eligible individuals as identified by the SHA (% of population)	7,65,77,504 (38.3%)	7,76,503 (16.5%)

Enrolment of PMJAY beneficiaries: Of the 7.7 lakh eligible beneficiaries, only 31,885 individuals (4.1%) had received the PMJAY e-cards. Of these 31,885 individuals, only 36% belonged to the original SECC list. The rest were from the AAY (48%), the MMJAA (11%), and the BOCW (5%). The enrolment numbers were similar in both urban (15,682) and rural sections (14,691) of the study district. More males were enrolled (52%) than females (Table 3). The largest age group enrolled was between 15 and 29 years of age (34%).

Utilization by PMJAY beneficiaries

Table- 3: Enrolment and Admission rates of PMJAY beneficiaries in the study district (2021-22)

Demographic groups		Number enrolled (N=31,885)		No. of patients (n= 4,430)		Admission rate	Statistical value (p-value)
		No.	%	No.	%	%	
Gender	Male	16,782	52.6	2,297	51.8	13.89	0.261
	Female	15,103	47.3	2,133	48.1	14.12	
Age (years)	0-4	45	0.1	03	0.06	6.66	**0.00001**
	5-14	1,905	5.9	123	2.7	6.45	
	15-29	10,875	34.1	681	15.3	6.26	
	30-44	8,913	27.9	1,714	38.6	19.23	
	45-59	7,038	22.07	1,278	28.8	18.15	
	60+	3,109	9.7	631	14.2	20.29	

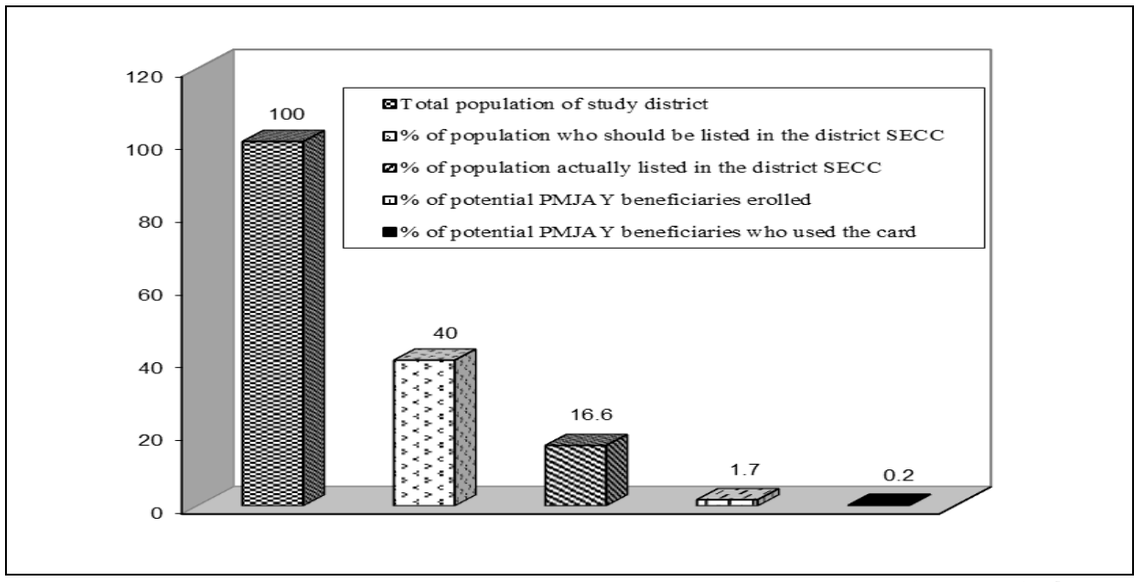
In the study district, the number of empanelled hospitals was 42 (7 Government and 35 Private). The number of pre-authorizations raised by the hospitals was 4,430. This indicates that the hospitals felt that 4,430 patients needed inpatient services. However, the SHA authorized only 4,351 (98%) patients for treatment. Claims were submitted for all these 4,351 patients, but only 4,101 (94%) claims were reimbursed by the SHA. The claims of 250 patients (6%) were rejected by the SHA due to various reasons. The number of claims submitted by the hospitals was Rs 6.2 crores, but only Rs 5.5 crores (89%) was reimbursed.

The overall admission rate was 13.6 per 100 enrolled. The admission rates for males and females were 13.7 and 14.1 admissions per 100 enrolled, respectively; this difference was not statistically significant (χ^2 = 1.2616, p=0.261). The admission rates were higher for the adults above 30 years compared to the youth (Table 3), and this difference was statistically significant

(χ^2 = 1036.2, p<0.00001). Most of the patients were admitted to private facilities (92.82%). The top three reasons for admission were medical conditions (55.5%), ophthalmic conditions (14.1%) and surgical conditions (8.8%). The average claim per patient was Rs 14,260.

Figure 2 depicts the cascade effect of the performance of the PMJAY in the study district. As per the NHA norms, 40% of the population in the district, i.e., 18.7 lakh individuals were expected to be potential eligible beneficiaries in the scheme. However, only 7.7 lakh individuals (16.6% of the population) were listed as an intended beneficiary in the district SECC list. Keeping the denominator at 18.7 lakh individuals, we note that the proportion of individuals enrolled is only 1.7% and the admission rate is only 0.2%. Consequently, only 0.2% of the total potential beneficiaries benefited from the 'free' hospitalisation services. While the shortfall appears to be in the SECC database, the main gap is the fact that only 4.1% of all potential beneficiaries were enrolled.

Figure-2: The cascade of beneficiaries under PMJAY in a district of UP



Source: *Authours*

Discussion

Our study (using programme data) shows that the number of potential beneficiaries listed in the SECC database was much lower than the expected 40%. To augment the enrolment, the SHA expanded the scheme to cover other vulnerable sections of the society, but even with this, only 4% of the potential beneficiaries were enrolled in the scheme. 14% of those enrolled benefited from the scheme by receiving free hospital services.

This is a unique study, as it represents a comprehensive descriptive analysis of coverage, enrolment, and utilization of the PMJAY scheme using programme data. While most studies research parts of the scheme, e.g., awareness among the potential beneficiaries[17], or utilization of the scheme[11] and/or OOPE made by patients[18], ours is one of the first studies to study the scheme in a holistic manner.

Our findings highlight the fact that though the PMJAY scheme intends to cover 40% of the population, in the study district, much of this population is not listed in the SECC database. We found that only 17% of the total populations were identified as eligible for the scheme in the study district. Most studies use this 'eligible' number as the denominator to calculate their indicators but in the process miss the 23 percentage points of the population who should be eligible but are not listed. Few

studies have documented the actual coverage of the eligible beneficiaries under the scheme. The PMJAY website provides the number of eligible beneficiaries but does not indicate the proportion of the vulnerable groups covered. A study conducted by the WHO and the NHA highlighted that the proportion of the population eligible to join the PMJAY was 38.6% in UP, 33.4% in Haryana and 32.3% in Himachal[19]. Our study shows that district level analysis may reveal districts with much lower eligibility rates, and these districts need to be studied in more detail.

Using the SECC database as the denominator (7.7 lakhs), we find that only 4.1% of the eligible beneficiaries have been enrolled. Most other studies use hospital-based data or have too small sample sizes for us to comment on the enrolment rates in other districts. A community-based study in six states that measured performance documented a 64% enrolment[10]. The WHO–NHA study using programme data also documented a low enrolment rate in UP, only 23.6%, compared to 34% and 45% in the neighbouring states of Haryana and Himachal Pradesh respectively[19]. Compared to these figures, the enrolment rate in the study district is very low and needs rectifying.

A critical issue in assessing the PMJAY's performance is the choice of the denominator used to calculate the utilization rates. In our study district, 7.76 lakh individuals were eligible for the scheme, but only 31,855 (4.1%) had enrolled. Most researchers use enrolment rate as the denominator to calculate the utilization rate. In our study district, if we use the denominator as 31,855 enrolled, then the utilization rate (among the enrolled) is 13.9%. However, 40% of the populations of the district are potentially eligible to benefit from this scheme. So, one should be using the 40% population (18.7 lakhs) or at least the 7.76 lakhs listed individuals as the denominator. In this case, we get utilization rates of 0.17% or 0.6%, respectively. While the figure of 13.6% may suggest adequate scheme performance among enrolled members, it masks a more fundamental problem: 95.9% of eligible beneficiaries remain unenrolled and therefore cannot access the scheme's benefits. Using only the enrolled population as the denominator creates a misleadingly optimistic picture of the scheme's reach and impact, as it excludes much of the target population who should be protected by the scheme but are not.

One reason why the utilization rate in the study district is very high, compared to other sites, is probably because those who were ill, registered for the PMJAY card. This hint of adverse selection could be confirmed if the gap between the date of enrolment and the date of utilization is small. Yet another reason could be the fact that the utilization data that we collected included all admissions, irrespective of the location of the hospital, whereas most studies restrict the admissions to only admissions in the district.

One major limitation of our study was that as we used programme data, we were not able to identify the reasons for the low listing of potential beneficiaries in the SECC list, or the low enrolment by the PMJAY team at the district level, or the high utilization by the enrolled patients. We also do not have any information about the patient satisfaction levels or any OOPE made by the patients. There also could have been some enrolled patients who have sought care in non-empanelled hospitals and so do not enter the PMJAY database. Answers to this can only be found from qualitative enquiries with the key stakeholders.

There are many studies that conduct surveys to assess the performance of the PMJAY. Unfortunately, most of these studies have very small sample sizes and so do not have the power to comment on the enrolment rates or the utilization rates or the amount of OOPE incurred by the patients. Our study demonstrates that it is possible to quickly assess the performance of the PMJAY at a district or state level by using programme data. This preliminary analysis may help the scientist develop hypotheses about the performance and delve deeper into the causes, using further quantitative and qualitative enquiry.

Conclusion

This study highlights gaps in the implementation of the PMJAY in the study district of UP. The proportion of identified beneficiaries and those enrolled was much lower than expected, indicating the weakness in the beneficiary database and enrolment processes. Due to these two gaps in the implementation of the scheme, the actual utilization rate is very low. Only six of 1,000 listed individuals have benefited from the scheme. We recommend that the UP SHA expand the coverage of the beneficiaries by

including other vulnerable population groups, and the district PMJAY team put more effort into enrolling more members into the scheme.

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