



# Health systems research for AB PM-JAY: mainstreaming quality of care in empanelled hospitals under AB PM-JAY

Policy brief

Policy brief: Mainstreaming quality of care in empanelled hospitals under AB PM-JAY

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# Acknowledgements



This report presents key findings from a study carried out on the 'Mainstreaming quality of care in empanelled hospitals under PMJAY'. It provides a detailed analysis of current coverage and perceptions of quality accreditation and certification across PMJAY empanelled hospitals from three different states (Haryana, Uttar Pradesh and Gujarat).

The WHO study team would like to acknowledge the Goa Institute of Management for their contribution to this study's execution. The study team are grateful to concerned officials/experts at the National Health Authority (NHA), State Health Agencies (SHAs) and empanelled hospitals for their technical input and participation in the study, respectively.

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## Health systems research for PMJAY: mainstreaming quality of care in empanelled hospitals under PMJAY

### Highlights

- Less than 40% of NABH accredited hospitals have empanelled with AB PMJAY. Out of those 26.5% have obtained Gold/Silver quality certificate (QC). Mere 1.4% have obtained Bronze certificate and less than 1% of the remaining have applied for the QC. The data highlights limited interest of accredited hospitals in empaneling with PMJAY and low adoption of QC
- Adoption of QC certificate is much lower in empaneled public hospitals compared to private. Only 0.1% of public hospitals have NABH or NQAS accreditation, as against 4% in private hospitals. Less than 1% of public hospitals are QC compared to 8.3% private hospitals.
- Average scores for structure-process-outcome of NABH full accredited (FA), NABH entry level certified (ELC) and non-accredited (NA) hospitals were 4.63, 3.48 and 2.66 respectively, indicating that FA hospitals are better placed to provide good quality care followed by ELC and NA hospitals. Accredited hospitals also had a significantly lower TAT for claim settlement.
- Qualitative interviews reflected that hospitals appreciate the value in obtaining NABH accreditation, but fail to see any specific benefit in obtaining QC.
- Average patients' rating of NA, ELC and FA hospitals were 9.2, 8.9 and 7.9 respectively, indicating that patients of FA hospitals are comparatively less satisfied.
- The findings suggest two things a) that accredited hospitals, which are better placed to provide good quality care are less interested in catering to PMJAY patients, than the non-accredited ones. A key reason for this could be difference in perception of price adequacy by accredited and non-accredited hospitals; b) the incentives for encouraging accreditation are blunt and therefore there is need to refine these to ensure increased accreditation.



## Introduction

### The Ayushman Bharat

Pradhan Mantri Jan Arogya Yojana (AB PMJAY), a financial protection scheme, is designed to provide access to secondary and tertiary hospital care for low-income families in India. It has been operational for over 2.5 years since its nationwide launch in September 2018. With a targeted beneficiary population of over 50 crore individuals, the scheme has, to date, reached out to at least 12 crore individuals through the issue of golden cards, which validate their entitlement to the benefits of the scheme. Further, over 9.5 lakh hospitalisations have been funded jointly through PMJAY and linked State-level schemes since its inception.

While the scheme is increasing the physical and financial access to hospital care for the target beneficiary, it needs to be complemented by an assurance of a sufficient quality of care at the empanelled hospitals to realise the goal of Universal Health Coverage (UHC). The importance of quality in healthcare has been well established in several studies, including the landmark report 'to err is human' and the follow-up study 'Crossing the quality chasm'.<sup>(1,2)</sup> Several other studies have reinforced the criticality of quality in healthcare. It is well recognised that poor quality causes people to avoid using services, thus making it a barrier to universal health coverage, independent of access.<sup>(3)</sup> Adverse implications of not taking quality along while expanding access have been reported.<sup>(4)</sup>

Recognising the importance of healthcare quality, in June 2019, the National Health Authority (NHA), in collaboration with the Quality Council of India (QCI), has taken the initiative to improve the quality of care at the empanelled hospitals. The mechanism for quality improvement is in the form of the quality certification system, which the National Accreditation Board inspires for Hospitals and Healthcare Providers (NABH) accreditation system operates under the ambit of the Quality Council of India (QCI). The quality certification system is a graded recognition of the quality achieved by an empanelled hospital by subjecting themselves to accreditation standards. It consists of three categories of certifications; bronze, silver and gold certificates of increasing quality. With a quality certification system, NHA hopes to increase patients' trust in their services, enabling PMJAY to progress towards UHC.

While a system for certifying the quality of hospitals has been put into place, there is a need to assess its effectiveness and sufficiency in mainstreaming the quality of care amongst hospitals empanelled with PMJAY. This study is carried out to assess and identify policy measures necessary for mainstreaming the quality of care provided by the PMJAY empanelled hospitals.

Although quality in healthcare has been defined in several ways, the most accepted definition is the one given by the Institute of Medicine, which is also adopted by WHO and by Joint Commission International. It defines healthcare quality as 'The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.'<sup>(2)</sup> The definition also states that for healthcare to achieve quality, it must be safe, effective, timely, efficient and people-centred. We adopted this one for this study.

The evidence is overwhelmingly in favour of the importance of accreditation of hospitals for improving the quality of care, albeit with a few negative or inconclusive studies. (5) There is a lack of research studies on healthcare accreditation or healthcare quality in the Indian context. One study by Mandeep, Chitkara & Goel (2014) and another by Gupta A. & Gupta C. (2016) cover the NABH accreditation system but do not explore its relation to the quality of care.<sup>(6,7)</sup>

The literature suggests that quality in healthcare is crucial and must be addressed by a scheme like AB-PMJAY. Therefore, it is important to analyse the effectiveness of PMJAY in leveraging its purchasing power to use accreditation for improving the quality of care as an intermediate goal towards achieving health system goals.

## Objectives and methods

The purpose of the study was to produce evidence-based recommendations to strengthen the ongoing mechanism for quality assurance and improvement of care being provided at PMJAY empanelled hospitals. This was done through the following objectives;

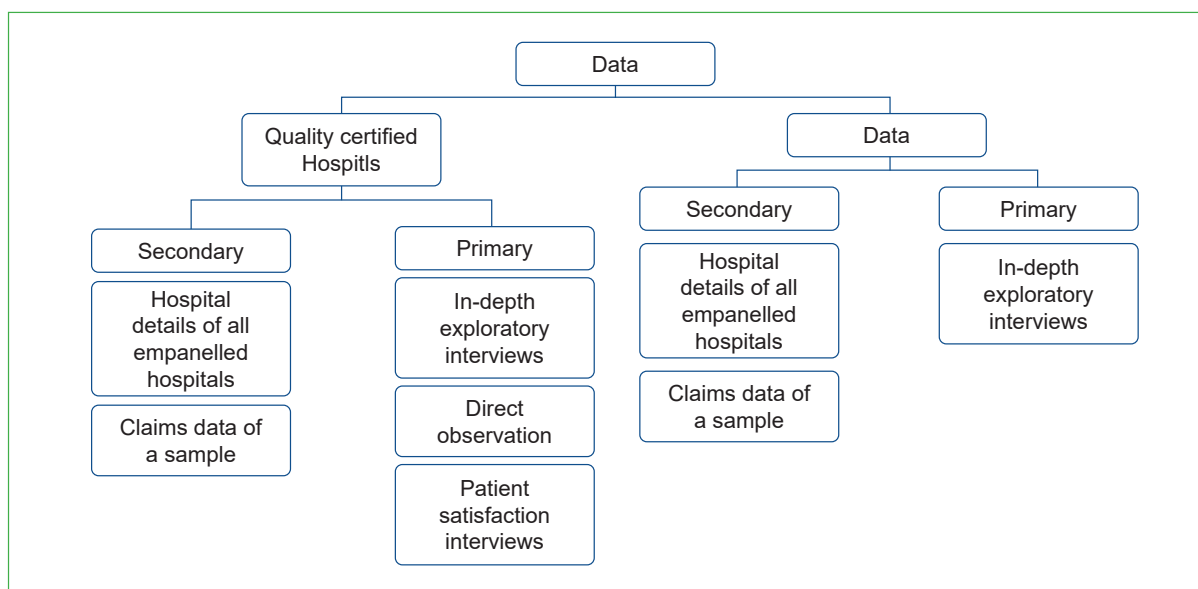
1. Assess the current level of penetration of PMJAY's quality certification mechanism amongst empanelled hospitals and explore factors hindering the same

2. Examine the hospitals that have acquired a quality certificate to understand their level of quality in comparison with non-certified hospital
3. Analyse the existing methods of quality assurance and improvement and identify potential areas for strengthening

**Method** - To address the objectives of this study, a mixed-methods approach was applied to collect the data. The data collection methods in this study include exploratory and in-depth interviews of stakeholders from quality certified and non-certified hospitals, direct observations of the certified hospitals, patient satisfaction interviews and secondary quantitative data analysis of the claims received from certified hospitals under the AB-PMJAY. The approach to data collection and analysis was iterative and dependent on the response of the relevant stakeholders included in this study. **Fig. 1** summarises the data for the study. The secondary data for the study was collected for the period up to June 2021. Primary data collection was done in the month of July and August 2021.

Direct observation of a sample of 21 hospitals from three different states and holding different levels of the certificate was done using a custom-designed checklist to assess their structure-process-outcome levels, to make a comparison. Observations were analysed on an overall basis and separately for three categories of the hospital, as per their accreditation status.

**Fig. 1: Data for the study**



Data from a sample of about 2000 claims submitted by certified and non-certified hospitals in the last month was analysed to assess claim-related outcomes indicative of hospital quality. TAT for claim settlement, claim value raised, and claim value rejected were calculated and compared between different categories. Frequently claimed packages were compared to examine their association with hospitals of any particular accreditation level.

Qualitative interviews of a sample of certified and non-certified hospitals were conducted to assess their feedback about the quality certification system and NABH accreditation system. Their opinion about the PMJAY scheme and their feedback on measures that can be taken to improve the quality of care was also obtained. A qualitative assessment of this data was done to summarise the findings.

Structured patient satisfaction and feedback survey were conducted using an established instrument and method, PSQ-18. Three hundred patients were approached for a survey, out of which responses could be obtained from 200 patients. All respondents had taken treatment in quality-certified hospitals within three months as AB-PMJAY beneficiaries. The data was analysed to identify and compare satisfaction levels with different aspects of hospital care across hospitals with different accreditation and certification status. Complaints from patients were also obtained and used to identify reasons for dissatisfaction. Finally, an assessment of the design of the quality improvement initiative was done based on theoretical models and findings from data.

## Findings on quality certification penetration

For the QC system to serve its purpose, it is crucial that it is well accepted by the empanelled hospitals. We explored how much has the scheme penetrated empanelled hospitals after more than two years of its rollout.

### NABH hospitals under PMJAY

Since the Silver and Gold certificates are linked to the NABH accreditation status of hospitals, we first look into how much interest NABH accredited hospitals shown in the AB PMJAY scheme. As per the publicly available list (as of Sept 22, 2021) on the NABH website, there are a total of 2,822 hospitals with some type of accreditation - 823 large hospitals and 445 small hospitals with full accreditation (FA) and 1554 hospitals with entry-level certifications (ELC),<sup>(24)</sup>. The data on hospitals empanelled with AB PMJAY shows a total of 1118 hospitals that have NABH accreditation of any type, which makes about 39.6% of the total accredited hospitals available in the country. This indicates that about 60% of the accredited hospitals have not opted for empanelment under AB PMJAY. Even after accounting for accredited hospitals in those few states that have not opted for the AB PMJAY scheme, the number of accredited hospitals not empanelled with AB PMJAY looks on the higher side, considering the four years since the launch of the scheme and abundant publicity that the scheme has received. If the aim of the QC scheme has to be realised, participation of accredited hospitals in the PMJAY scheme will be important. Further sections of this brief highlight some concerns that could be the reasons for non-participation.

### Public/private participation in quality initiative

PMJAY scheme empanels both public and private hospitals. The data of their accreditation and QC as of June 2021 is given below

**Table 1: Empanelled, accredited and quality certified hospitals – Public and Private**

Hospitals	Public Hospitals	Private Hospitals	Total
Total empanelled	13,516	12,301	25,817
NABH accredited (FA or ELC)	96	1,022	1,118
NQAS certified	34	-	34
Gold certified	2	135	137
Silver certified	10	196	206
Bronze certified	1	164	165
Registered	47	178	225

Amongst all empanelled hospitals, while the share of public hospitals is slightly higher than private hospitals, the proportion of NABH accredited, and QC hospitals are close to negligible in empanelled Public hospitals. 92% of all NABH accredited hospitals and 98% quality certified hospitals are in private empanelled hospitals. Even the NQAS accreditation, which is primarily aimed at public hospitals, is just 34 (0.25%) out of all empanelled public hospitals. The data shows that the trend of accreditation and quality certification, with some exceptions, is absent in public hospitals. Hence further analysis is done on data of private hospitals only.

### Nationwide and state-wise penetration

The proportion of NABH accredited hospitals that obtained Gold/Silver certificates was observed to be only 26.5% at the country level. This proportion is considerably from the country level. This proportion varies considerably from state to state. Out of the states that have five or more NABH accredited hospitals, Goa, Madhya Pradesh and Kerala were observed to have the lowest proportion at 0%, 2.5% and 5.4%, respectively, while Haryana, Gujarat and Bihar have the highest proportion at 80.7%, 54.2% and 50% respectively.

It is pertinent to note that since the only requirement for getting a Gold/Silver certificate is their NABH accreditation status, the process is more of a formality than an assessment-based certification.

No specific factors could be identified from the available data to explain the reason for these differences, and further study is recommended to explore this difference.

In the Bronze certificate category, the penetration has been mere 1.4% overall. However, it should be noted that, unlike Silver and Gold certificates, the Bronze certificate process involves the implementation of specified standards and an independent onsite assessment.

In state-wise data, if we exclude Puducherry for its very low denominator, the variation ranges from 0% to 10.6% (the second highest being 3.9%), much less than Gold/Silver.

Hospitals currently not certified but registered for the process are extremely less if we see their proportion out of the eligible hospitals. Within states, except for Telangana, all other states have less than 1% of their hospitals registered for QC. 11 out of 18 states listed in the table have no hospitals registered.

The findings show that the overall penetration of the QC system is low for all QC levels, particularly in public hospitals. The Gold/Silver category variation is higher in state-wise penetration compared to Bronze. Registered hospitals are very less in numbers and proportion. This implies assessing the incentives for accreditation and how these can be improved to ensure increased uptake for all types of hospitals.

### Quality Certification as per hospital size

We assessed the penetration of QC in hospitals of different sizes (**Table 2**). The hospitals were grouped into three categories, as per their number of beds

1. Large – 100 or more beds
2. Mid-sized – 30 to 99 beds
3. Small – less than 30 beds

The data doesn't show any noticeable difference in hospital size for Gold and Silver certified hospitals. However, for the Bronze certificate, the proportion in the large hospital seems to be higher than in mid-sized hospitals and more than twice what was observed in small hospitals. The data of registered hospitals also show observations similar to the Bronze certificate

**Table 2: Empanelled, accredited and quality certified hospitals – as per hospital size**

Hospital size	Empanelled	NABH	Gold	Silver	G/S Prop	Bronze	Bronze Prop	Registered	Reg prop
Large	1154	321	49	30	24.6%	17	2.0%	41	3.9%
Mid-sized	4210	387	45	66	28.7%	60	1.6%	65	1.6%
Small	6937	278	27	44	25.5%	51	0.8%	48	0.7%
Total	12301	986	121	140	26.5%	128	1.1%	154	1.3%

To test the observations, we ran a Chi-square test to examine the association of QC penetration with large hospitals and mid & small-sized hospitals. The proportion of hospitals that obtained Gold and Silver certificates did not significantly differ by size,  $\chi^2(1, N = 12301) = 0.846, p = .357$ . For Bronze certificate and registered hospital categories, the statistical analysis shows that its proportion in large hospitals is significantly higher than mid & small hospitals  $\chi^2(1, N = 12301) = 6.651, p = .009$  for Bronze and  $\chi^2(1, N = 12301) = 60.681, p = .000$  for registered hospital category.

The findings suggest that the overall penetration is low across all sizes of hospitals. For the Gold and Silver category, there is no difference in the penetration levels in large, mid-sized and small hospitals. However, the penetration of Bronze certification is comparatively more in large hospitals, and large hospitals are comparatively more inclined to obtain a certificate compared to mid and small hospitals, as is evident from registered hospitals data.

### Quality certification as per the duration of empanelment

AB PMJAY scheme was launched in September 2018. Since then, hospitals have been empanelled under the scheme. In an earlier study done by us on "Examining Trust and Insurance Model under AB PMJAY scheme", we observed that the empanelment of hospitals was carried out at a rapid pace in the initial months, and the rate of empanelment gradually declined.<sup>(25)</sup> We looked into how the hospitals that were empanelled earlier in the scheme compare with the hospitals that got recently empanelled in their adoption of the QC system. For this, we classified the hospitals into three groups based on the period since they are empanelled and looked into the number of hospitals with NABH accreditation and QC. (**Table 3**)



- New - less than one year,
- Mid - 1 to 2 years and
- Old - more than two years

For hospitals that were empanelled more than two years back, no hospitals were found to have NABH accreditation or QC. These hospitals would have been empanelled in the initial months of the scheme's launch. It could be possible that these hospital's data regarding their accreditation may be missing or not collected

**Table 3: Empanelled, accredited and quality certified hospitals – period of empanelment**

Period of empanelment	n	NABH	NABH %	Gold	Silver	G/S Prop	Bronze	Bronze Prop	Registered	Reg prop
< 1 year	1726	341	19.7%	3	4	2.1%	13	0.9%	21	1.2%
1 - 2 year	3617	645	17.8%	118	136	39.4%	115	3.9%	108	3.3%
> 2 years	4484	0	0%	0	0	-	0	-	0	-
Total	9827	986	10.0%	121	140	26.5%	128	1.4%	129	1.4%

A bulk of QC hospitals are from mid-duration empanelled hospitals. The proportion of Gold and Silver certificate in new hospitals is significantly less than the mid-duration hospitals. ( $\chi^2(1, N = 9827) = 159.68, p = .000$  for Gold and Silver certificate and  $\chi^2(1, N = 9827) = 51.29, p = .000$  for Bronze and Registered hospitals).

While some differences between the adoption of new and mid-duration hospitals could be explained by the fact that new hospitals may not have sufficient time to complete the process of certification, the difference is still big. In addition, the proportion of registered hospitals also is significantly higher in mid-duration hospitals. The data 'suggest the hospitals that are newly joining the AB-PMJAY scheme are even less interested in opting for Quality Certificate.

However, in the last year, 19.7% of the newly empanelled hospitals had NABH accreditation, which appears to be significantly higher than the 7.9% accredited to the empanelled ratio in hospitals earlier than one year. This rise in the number of accredited hospitals coincides well with the initiation of the Quality Certification System, indicating an impact on the interest of accredited hospitals. However, the bulk of accredited hospitals that empanelled new had entry-level accreditation.

One of the key limitations of this section is the missing data on NABH accreditation, its type and the QC category of the hospitals. Few observations indicate that there could be some level of inaccuracies in the data.

## Findings from physical observations

While the hospitals differed in their structure-process-outcome at an individual level, the differences were more perceptible between hospitals belonging to differing accreditation categories. In each accreditation category, divergence was noticeably higher in ELC and non-accredited (NA) hospitals than FA hospitals.

Amongst the three categories, FA hospitals had the best infrastructure, processes and outcomes, followed by ELC and NA, respectively. **Table 4** describes hospitals' score ranges and average scores under each accreditation category.

**Table 4: Average score and score range of structure-process-outcome amongst FA, ELC and NA hospitals**

Accreditation category	n	Structure	Process	Outcome	Overall
NABH full accredited hospitals	8	4.63 (3.91 – 4.88)	4.64 (4.45 – 4.77)	4.61 (4.23 – 4.85)	4.63 (4.2 – 4.8)
NABH entry level certified hospitals	7	3.63 (3.13 – 3.98)	3.41 (1.87 – 4.17)	3.4 (3.04 – 4.13)	3.48 (2.91 – 3.89)

Accreditation category	n	Structure	Process	Outcome	Overall
Not accredited hospitals	6	2.91 (1.88 – 3.67)	1.97 (1.23 – 3.56)	3.09 (2.46 – 3.5)	2.66 (2.17 – 3.47)

### Observations in full accredited hospitals

Out of all hospitals studied, FA hospitals were generally found to have better infrastructure, processes and outcomes compared to ELC and NA hospitals. These divergences in the level of structure-process-outcome between all FA hospitals studied were also lower.

FA hospitals had good structure-related output. This included, among other things, good building infrastructure, water availability, housekeeping, etc. Full-time doctors, visiting consultants in the panel, availability of all required support and utility services and well-defined management structures were found to be there in FA hospitals.

On the process front, these hospitals had most of the processes needed for quality management. All FA hospitals had dedicated resources allocated and organised for managing quality standards across the hospitals. Policies and processes such as those required for infection control, patient identification, medication safety, emergency codes, diagnostic quality, patient feedback collection, Medical record-keeping system, internal audit system etc., were there in almost all FA hospitals. Clinical protocols and clinical criteria were initiated in these hospitals.

The outcome points observed in these hospitals were impressive. These hospitals were clean, well maintained and well kept. The crowd management was effective, biomedical segregation was largely being done appropriately, and a good level of compliance of staff on hand-hygiene practices. In a few hospitals, where the behaviour of staff towards patients was observed, it was found to be respectful.

While the level of structure has some differences between different FA hospitals, the processes and outcome levels were fairly similar. Overall, FA hospitals, in general, were found to have all those aspects that are necessary for providing good quality and standardised care to patients.

### Observations in entry-level certified hospitals:

Compared to FA, the ELC hospitals had lower levels of structure-process-outcome. The divergence between hospitals within the ELC category was also higher than FA for process and outcome component.

ELC hospitals were small to mid-sized, with average infrastructure. Staff and other resources appeared to be limited. The management structure was found to be weak to moderate, with most managerial activities done by just 2-3 people. Full-time consultant doctors were very limited, with clinical care being provided by visiting doctors. The processes followed at ELC hospitals varied greatly across different hospitals. Typically, in these hospitals, the quality and accreditation preparation work was supported by an external consultant, with one staff from the hospital coordinating all quality improvement activities.

The cleanliness and crowd management level appeared to be reasonably good, though the hospital seems less organised.

### Observations in non-accredited hospitals:

The divergence in the level of structure-process-outcome was observed to be highest in this group of hospitals. On an overall basis, not many differences were observed between ELC and NA hospitals. They were mostly small hospitals, offering limited services and facilities. Staff were limited, and very few administrative staff. Typically, they were single doctors run or in partnership, with the owners managing the day-to-day function.

Process-wise also, these hospitals differed significantly. While in most hospitals, the processes necessary for quality services were not found, some hospitals preparing for ELC have initiated some of these processes.

Some lack of management was observed; however, the cleanliness was good, and the crowd management was done appropriately.

## Inference from physical observation

The number of hospitals studied under each category constitutes an inadequate sample to generalise the findings. Hence, from the findings, no comment about the level of quality of FA, ELC and NA hospitals can be made. The purpose of the study was to get a sense of the difference between NA, ELC and FA hospitals.

Observations reflect that the level of structure-process-outcome is better in FA hospitals followed by ELC hospitals. These findings suggest accreditation level could be a good indication of the level of quality of a hospital.

Looking into the typical profile of hospitals in each category, the FA hospitals were significantly well resourced and had good infrastructure, compared to ELC and NA hospitals. However, the difference between ELC and NA hospitals was not that pronounced.

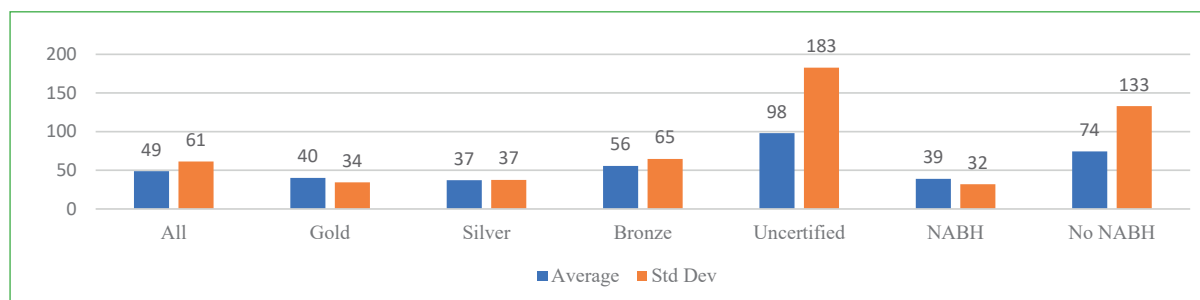
## Findings from analysis of claims

### Turn-around time for claim settlement

TAT is the duration between the dates of submission to claim to the date of the closure of the claim. The claim is closed when the payment is made or when the claim is rejected. TAT is affected by multiple factors that are related to the hospital submitting the claim and also to the agencies processing the claim. Factors related to the hospital include timely updating of all data on the portal, uploading required documentary pieces of evidence, prompt response to the queries raised and ensuring that all data and information submitted are correct and complete. A hospital having effective management and good practices related to patient care documentation should address these factors and hence should be able to impact the reduction of TAT.

We found that TAT differed across hospitals with different certificate levels and between NABH (FA/ELC) and NA hospitals (Fig. 2)

Fig. 2: TAT of claim settlement



Gold and silver-certified hospitals have a lower TAT and deviation than the overall average. Similarly, NABH - FA/ELC hospitals also had a lower TAT. A two-sampled t-test conducted to compare TAT in Gold/Silver certified hospitals and non-certified hospitals resulted in a significant difference between their mean TAT ( $p = .000$ ). Differences between NABH – FA/ELC, and NA hospitals were also significant ( $p < .000$ ), with the mean TAT of NABH FA/ELC hospitals significantly lower than NA hospitals

Assuming that the claim processing agencies address claims from all hospitals similarly, the findings indicate that Gold/Silver certified hospitals, which are also FA/ELC hospitals, could be better in-patient care documentation and effective data update on the claim processing portal.

### Value of claims

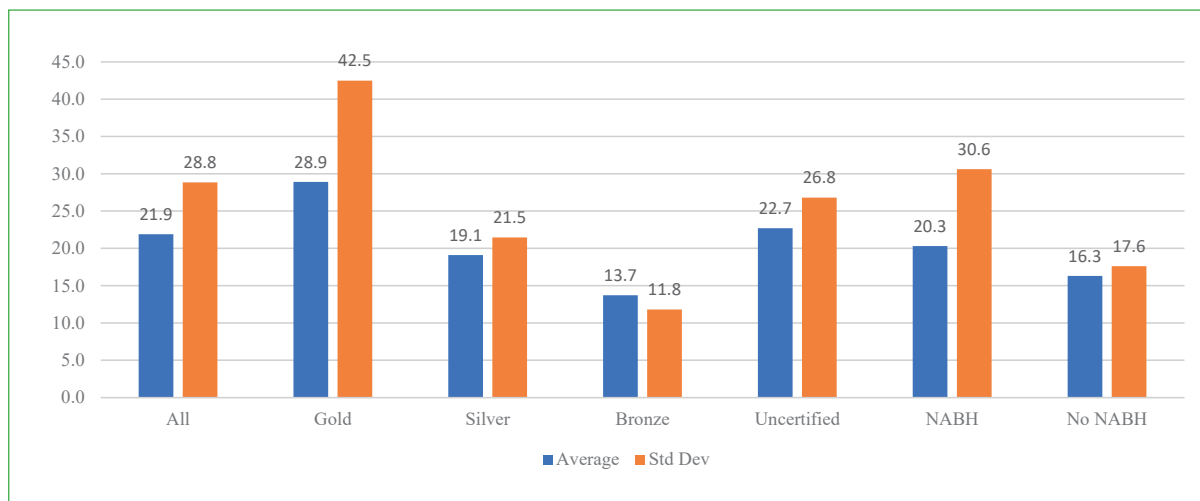
The average value per claim indicates the level of healthcare being provided by the hospitals, with a higher value indicating more advanced care offered. Hospitals with better infrastructure and resources can generally provide a higher level of care. This measure can indicate the infrastructural capacity of the hospitals.

The average and standard deviation of the value of claims of hospitals with different certificate levels and between NABH –FA/ELC and NA hospitals is given in Fig. 3.

Gold-certified hospitals submitted the highest value per claim, followed by Silver, while Bronze-certified hospitals had the least value per claim submission. NABH FA/ELC hospitals also had submitted higher value claims. The differences were found to be statistically significant at  $p < .005$

Based on claim values submitted by hospitals, it appears that the Gold/Silver certified hospitals and NABH FA/ELC hospitals are comparatively better equipped to provide an advanced level of care than Bronze and NA hospitals

**Fig. 3: Claim value submitted (in Rs. '000)**



### Claim rejection by value

While the hospital makes the claim submission, the amount to be approved for payment is decided after verification by the claim processing agencies. Based on the verification process, the full or partial value of the submitted claim may be rejected. Rejection can happen primarily due to two reasons,

1. Incomplete or inaccurate documents and data submitted with the claim
2. Claimed amount higher than what is permissible as per the AB PMJAY scheme

While the first reason could be indicative of less effective processes and systems of the hospital indicating quality lapses, the second point may not necessarily be because of poor quality.

The total claim amount submitted and paid by the sample hospitals was calculated to determine the amount rejected across hospitals with different QC and accreditation

Gold and silver-certified hospitals show a noticeably higher rejection percentage, while Bronze has a much lower rejection rate. Similarly, NABH hospitals had a higher rejection percentage. Since, from the assessment of TAT, we know that the Gold/Silver and NABH hospitals are good in patient care documentation and timely provision of data related to claims, we believe that majority of these rejections could be because of higher than permissible claims being raised by these hospitals. However, the exact reason for higher rejections in accredited and certified hospitals needs to be explored, as it is contrary to the expectation.

### Frequently claimed packages

The frequently claimed packages differ across hospitals per their accreditation or the QC status explored. This helped in understanding if there is a preference of patients for a specific type of hospital, depending upon their health condition and treatment requirement.

From all claims in the sample, the hospitals claimed a total of 315 unique treatment packages. Out of these, nine packages (3.2%) accounted for about 50% of all the claims. The distribution of these top 9 packages across hospital types is given in Table 6

**Table 5: Claim submitted**

	All	Gold	Silver	Bronze	Uncertified	NABH	Non-NABH
Claim amount submitted	234.0	66.6	38.3	38.1	91.0	118.2	115.8
Claim amount paid	207.0	55.8	31.8	36.5	82.9	99.9	107.1
Claim amount rejected	27.0	10.8	6.5	1.6	8.1	18.3	8.7
Percentage rejected (%)	11.5	16.2	17.0	4.2	8.9	15.5	7.5

**Table 6: Proportion of the treatment package claimed in a hospital category out of all claims raised for that treatment package**

Package/hospital category	n	Gold	Silver	Bronze	Uncertified	NABH	Non-NABH
N	1839	361	299	348	831	841	1839
Cataract	296	23.6%	10.8%	24.7%	40.9%	50.0%	50.0%
Haemodialysis	197	36.0%	16.2%	20.8%	26.9%	39.1%	60.9%
Coronary angiography	85	36.5%	30.6%	0.0%	32.9%	51.8%	48.2%
Hysterectomy	59	3.4%	6.8%	35.6%	54.2%	20.3%	79.7%
Laparoscopic Cholecystectomy	54	9.3%	18.5%	14.8%	57.4%	24.1%	75.9%
PTCA (single or double stent)	52	38.5%	25.0%	0.0%	36.5%	71.2%	28.8%
PCNL	48	2.1%	12.5%	14.6%	70.8%	37.5%	62.5%
Total knee replacement	45	28.9%	26.7%	0.0%	44.4%	31.1%	68.9%
Acute gastroenteritis	36	0.0%	63.9%	2.8%	33.3%	27.8%	72.2%
Other	967	15.3%	14.6%	20.4%	49.7%	48.4%	51.6%

The Chi-square test of independence was performed for each of the top 9 treatment packages between NABH and non-NABH hospitals. The statistics showed that six out of the top nine treatment packages show statistically significant association with hospitals as per their NABH and non-NABH link, with five packages (Hemodialysis, Hysterectomy, Laparoscopic Cholecystectomy, Total Knee Replacement and Acute Gastroenteritis) positively associated with non-NABH hospitals and one package (PTCA) with NABH hospitals. This indicates a preference for non-NABH hospitals by the majority of the patients. Since NABH hospitals are, on average, larger than non-NABH and have offered more specialities, this finding indicates that non-NABH hospitals have a higher level of interest in treating PMJAY patients than NABH hospitals.

## Hospital's perception and feedback for mainstreaming quality

### Hospital's perception of NABH accreditation

Since NABH is the basis of QC, we assessed what hospitals think about the NABH accreditation system. Questions were directed towards understanding if they perceive NABH as useful and valuable and what will be their future course of action with regard to NABH accreditation. Findings are reported qualitatively in the below section **NABH effect on the quality of care** – All hospitals having NABH accreditation, either entry-level or full, were asked if they feel any benefit on quality of care by the NABH accreditation system. In general, the responses were positive to extremely positive. Except for one hospital, all others responded that their systems and processes have improved because of NABH accreditation. Improvement in documentation and record-keeping, standardisation of processes, awareness of staff about good practices and establishment of patient safety practices were few commonly reported benefits of NABH accreditation.

When a similar question was asked to NA hospitals, as do they think NABH accreditation will improve the quality of their hospitals, three out of seven hospitals said that they think it will, while others were either unsure or did not have any opinion.

Several non-accredited hospitals mentioned that they have started preparing or are in the process of getting accreditation.

**Other benefits of NABH accreditation** – Other than quality improvement, all hospitals stated that the NABH accreditation helps in positive image building within the hospital industry. NABH accreditation is viewed as a coveted recognition, and hospitals that achieve accreditation are viewed as reliable hospitals for undertaking patient care. About half of the hospitals shared that even in-patient community, there is some level of awareness about NABH accreditation, and some patients prefer a hospital for its accreditation status. It is worthwhile to note that the discussion was in context to patients who are AB PMJAY beneficiaries. In addition to the positive image, NABH accreditation also improves the hospitals' chances of getting empanelled with various health insurance companies and other government health schemes, like CGHS. Amongst other benefits, some hospitals did acknowledge that NABH accreditation enables them to receive incentives on the AB PMJAY package, which is not available to non-NABH accredited hospitals. However, this benefit was largely started by ELC hospitals and not so much by FA hospitals.

**Future plans** – When asked about how likely are they to continue with NABH accreditation in future, without exception, all FA hospitals shared that they will definitely continue with the NABH accreditation system. Several also stated that they will upgrade themselves to the newer editions as and when released. 5th edition of NABH has been released this year, and the fully-accredited hospital has either upgraded or is in the process of upgrading itself.

Amongst ELC hospitals, four hospitals said that they are planning to upgrade themselves to the FA category. However, the hospitals added that getting full accreditation may take time and effort. Uncertainty over the ability to get full accreditation was noticeable from their statements as well as expressions. Of the other hospitals, two said that they are not sure about full accreditation, and one clearly stated that as of now, they are not planning to go for full accreditation. These hospitals accepted that for their kind of hospitals, achieving EL is itself an achievement, and for full accreditation, a largescale up-gradation will be required.

From the NA hospitals group, most hospitals have either started or planning to start to prepare for NABH accreditation. Some of them are in advanced stages and said that they are expecting an EL certificate soon.

### **Hospital's feedback about the quality certification programme**

Perception of the hospital about the QC programme was taken to understand what value they see in QC and the reasons for which they have obtained or not obtained the certificate

**Benefits of certificate** – Hospitals were asked if they realised any benefit of obtaining QC and, if yes, what the benefits were. The response from Silver and Gold certified hospitals were largely negative. Other than just adding one more certificate to the name of the hospital, no other tangible or intangible benefits were reported by any hospital. There is no additional incentive for getting QC; whatever incentive is there, it is because of NABH accreditation, which can be availed even if the hospital does not have QC. Even on brand image, most hospitals were neutral to negative about QC having any effect on a hospital's brand image. Two hospitals said that they have displayed the certificate and often use it in their publicity content. However, all hospitals agreed that the awareness about what this QC means is very low in the hospital industry and almost non-existent in-patient community. Hence, having or not having QC does not make much difference from an image point of view.

Bronze-certified hospitals are not accredited but were eligible to receive a 5% incentive. When the question on the benefit of the certificate was asked to Bronze-certified hospitals, almost none of them mentioned a 5% incentive as a benefit. Upon probing, some stated that they are not receiving any incentive, and a few others said that they don't know if they are actually receiving the incentive or not. Silver and Gold hospitals, on the other hand, confirmed that they receive a higher premium as an incentive for being accredited. However, compared to the response from Silver and Gold certified hospitals, the response was slightly positive. Some Bronze category hospitals acknowledged that the certificate had motivated them, and they are planning to get an EL certificate from NABH. On the image front, however, the response was similar as they maintained that they do not see much recognition in the industry or amongst patients for the Bronze certificate.

**Reasons for obtaining a quality certificate** – No inherent reason was reported by any hospital for QC. The most common response was that they were informed by DIU or SHA officials to apply for QC,

and hence they did so. A couple of hospitals mentioned that since it was informed by the Government, they thought that it could be mandatory, and hence they applied. They also added that since the process of application was completely online and simple, they just applied for the certificate.

**Future plans** – Almost all hospitals said that they had not given much thought to what they would do in the future, but as of now, they don't see any problem continuing with QC. The process is simple, there are no additional requirements, and there is no additional fee, so there is no specific reason to discontinue the QC. Many of them, however, stated that if there are some benefits attached to getting the certificate, then hospitals will be interested in continuing.

### **Opinion about AB PMJAY**

In addition to their response on the NABH accreditation system and Quality certification system, we also enquired about their experience with AB PMJAY and future plans.

**Package rates** – In general, there was dissatisfaction with the package rates as most hospitals think that the rates are very low. In several packages, the rates are so low that even the cost cannot be recovered. Hospitals that offer treatments through visiting consultants mention that they find it extremely difficult to convince visiting consultants to do a procedure at a reduced rate. The dissatisfaction with package rates was more pronounced in bigger and well-resourced hospitals compared to smaller hospitals. These hospitals said that the AB PMJAY rates are a fraction of what they charge to their cash patients. Since AB PMJAY rules don't allow the empanelled hospitals to reject patients, some hospitals feel that admitting an AB PMJAY patient devoid them from admitting another cash patient, from whom more revenue could have been generated

**Claim management** – Smaller hospitals expressed their dissatisfaction over the process of claim management. Delay in payout, reduction of the claim amount, claim rejection, too many queries and a lot of documentation work were the concerns shared by these hospitals. Several hospitals also reported that TPA/ISA is the weak link

**Future plans** – Only one hospital with no accreditation said that they are not happy with AB PMJAY and may not be willing to take AB PMJAY patients in future. This was primarily because of the rejection of a couple of high-value claims that have caused loss to the hospital. All other hospitals with no ELC stated that they would continue with AB PMJAY in future, despite the problems they are facing with claim settlement and package rates. They hope that the claim process is streamlined and package rates for underpriced treatments are revised upward.

Amongst FA hospitals, the responses were mixed. Some hospitals categorically said they would like to discontinue AB PMJAY as the package rates were very low. Others who expressed that they will continue reasoned it for social cause and not really for business reasons. Almost all FA hospitals expressed that the package rates are low and do not provide economic incentives. Pertinent to note here that these FA hospitals were well resourced with all required equipment and staff. The cost of running such hospitals appears to be significantly higher than those with no EL accreditation.

### **Response of hospitals who did not opt for QC**

To compare the response of the quality-certified hospital, we also spoke to a few non-certified hospitals. These hospitals include FA, ELC and non-accredited hospitals to match the sample mix of study group hospitals.

When asked about the reason for not applying for certification, most hospitals did not state any specific reason. After probing, the two most common reasons cited by this group of hospitals were that they were unaware and did not see any benefit of going for QC. Most hospitals also mentioned that there is no benefit of going for QC, or if there is any benefit they are not aware of the same. Only two out of eight hospitals contacted said that they could think of going for QC. The response of these hospitals on other points corroborated with the study group hospitals. They also feel that the package rates are lower, claim settlement is not timely, and too much documentation and query in claim processes. All hospitals were willing to continue with the AB PMJAY scheme in future.

## Feedback on quality improvement

A variety of feedback and ideas were received from hospitals on what the Government should do to encourage hospitals to offer quality services. The feedback predominantly reflected the problems that hospitals are facing, and resolving these problems is essential before attempting any quality improvement efforts. After grouping, the common feedback from hospitals is described below.

**Price** – Overwhelming feedback from all kinds of hospitals was on how important it is to revise the package rates upward. The hospitals were of the opinion that good quality care should not be expected at a low price. For hospitals to be able to provide high-quality care, rates should be accordingly set. Some hospitals also suggested that clubbing of packages should be easily allowed, without reducing the price of the second or third package.

**Differential pricing** – Suggestions about differential pricing, as per the level of hospital, largely came from large, well-resourced hospitals that have a higher price. As per them, the hospitals are of different levels. One cannot pay the same price to all hospitals. Government should have a mechanism to pay higher rates to hospitals that provide good quality care. The premium incentive of 10%-15% was not enough to sufficiently differentiate the levels of hospitals. If Government pay good rates to quality hospital, then naturally, every empanelled hospital will try to get into that bracket

**Claims management** – From mostly the smaller hospital, the feedback was on streamlining the claim management process and making it easy for hospitals. Turn-around time should be reduced, and unnecessary queries to be avoided. These processes, documentation and delays just demotivate the hospital. If claims are processed smoothly, then hospitals will be interested in attracting more patients, which in turn can increase competition leading to the enhancement of quality

**Awareness amongst beneficiaries** – Suggestions on creating awareness amongst beneficiaries about good quality hospitals were also received. As per some hospitals, AB PMJAY beneficiaries are largely ignorant and cannot differentiate between good quality and poor-quality care. Government should carry out a drive to educate the beneficiaries about good quality hospitals. As per the recommendation, creating extensive awareness amongst beneficiaries about what it means to have a Gold/Silver/Bronze certified hospital will help beneficiaries decide where to seek care. This will increase the importance of QC, and many hospitals will then try to achieve it

**Other** – Few other feedbacks that were received include increased monitoring by SHA and DIU, Financial support for investing in infrastructure, trusting the hospital rather than doubting them in the claim process and providing reward and recognition to hospitals that provide good quality care

## Findings from patient's feedback

The satisfaction score was calculated for six aspects of patient satisfaction as per the PSQ-18 methodology. The scores and rating for hospitals is given in table 7

**Table 7: Patient satisfaction scores and rating**

Quality aspect	All	FA	ELC	NA
General satisfaction	3.74	2.99	3.79	3.85
Technical quality	3.88	3.21	3.87	3.91
Interpersonal manner	3.99	3.25	3.95	4.11
Communication	3.94	3.25	3.91	3.99
Financial aspects	3.47	2.80	3.49	3.57
Time spent with doctor	3.95	3.25	3.90	4.05
Access and convenience	3.88	3.16	3.85	4.02
Overall hospital rating	8.60	7.90	8.90	9.20

The scores indicate that on overall rating as well as on all six aspects of patient satisfaction, FA hospitals have received a lower level of satisfaction, compared to ELC and NA hospitals have received the highest level of satisfaction. The findings are thus contrary if accreditation levels are equated with patient satisfaction. The differences, however, are not statistically significant. It is also worth noting that



the difference between FA and ELC is noticeably greater than the difference between ELC and NA. To rule out the effect of other factors on patient satisfaction, the correlation of overall rating with gender, age and region was measured, and no correlation was observed.

## Complaints of patients

Along with the specific questions from PSQ-18, respondent patients were also asked to qualitatively describe their experience to capture their specific complaints. 103 patients provided descriptive feedback, which, when qualitatively analysed, resulted in just three distinct types of complaints (Table 8)

**Table 8: Patient complaint types and their frequency**

Complaint type	Description	Frequency
Financial	Have to pay out of own pocket for some part of the treatment	94 (47%)
Clinical outcome	The clinical problem of the patient was not resolved to his/her satisfaction	21 (10.5%)
Empathy	Did not behave properly, or empathy was lacking	19 (9.5%)

With 47% of the patient stating financial complaints in one or other manner, it was identified as the most pressing problem being faced by the AB PMJAY beneficiaries. The scheme provides almost full financial protection to beneficiaries, and this is central to the ultimate goal of universal health coverage. Dilution of financial protection, if actually happening, will adversely affect the basic purpose of the scheme. There is a case to specifically look into the veracity and depth of this problem. In our survey, patients with financial complaints generally reported having paid for the diagnosis, post-operative treatment, blood, specialist consultation from outside, and medicine to be bought outside the hospital.

Complaints related to clinical outcome and empathy, although less frequently reported than financial complaints, still appear to be reasonable, with close to 10% of patients stating these as problems.

Table 9 describes the distribution of complaints across hospitals with different accreditation levels. While the numbers are low to derive any meaningful information, this complements it when looked at in continuation to patient satisfaction scores.

Like patient satisfaction score and overall rating, frequency of complaint too depicts the same picture. The complaints, overall, as well as their types, are higher in proportion in FA hospitals and least in NA hospitals. Again, the difference in complaint proportion between FA and ELC is remarkably higher than that between ELC and NA hospitals, similar to how patient satisfaction scores differ between these categories.

**Table 9: Patient complaints as per the accreditation category of the hospital**

	Percentage of patients who stated the complaint			
	All hospitals	FA hospitals	ELC hospitals	NA hospitals
Patients with complaints	52%	57%	48%	48%
<b>Complaint type</b>				
Financial	47%	54%	44%	42%
Clinical outcome	10.5%	18%	9%	3%
Empathy	9.5%	12%	9%	6%

## Limitations

Some key limitations of this section should be kept in mind while interpreting the findings. Firstly, the sample size is relatively small for overall measurement and significantly small in sub-categories for making any statically relevant conclusion. Secondly, the random selection of the sample cannot be ascertained, as the hospitals shared the respondent details, and the possibility of some hospitals influencing the selection cannot be ruled out. Lastly, this was a spot survey, and the longitudinal applicability of findings cannot be determined. In future studies, the limitations related to sample size and sample selection can be overcome by enabling access to the research team to identify data of AB PMJAY beneficiary patients.

## Discussion, conclusion and recommendations

The findings suggest a unique situation that seems to have emerged within the PMJAY scheme. The accredited hospitals that are better placed to provide good quality care are less interested in catering to PMJAY patients, while non-accredited, with lesser ability to provide good quality care, are more willing to treat PMJAY patients. We believe that this difference in interest is primarily because of the pricing of the services by the hospital and is reflected through their accreditation status. Accredited hospitals are mostly high-priced hospitals, as they are better placed to achieve accreditation than the low-priced hospitals. Because accredited hospitals are also generally high priced, the difference between PMJAY package rates and their market price is felt more starkly by them than the low-priced non-accredited hospitals. This phenomenon can further be examined by specifically studying the correlation between claims submitted by hospitals and the market price charged by them. If true, and the price difference is substantial, it explains the lack of interest of high-priced accredited hospitals in catering to the PMJAY patients, as it adversely affects their business. In contrast, the low-priced, non-accredited hospitals could see value in catering to PMJAY patients. While these hospitals also reported low package prices, assuming that the price difference between their usual rates and the PMJAY rates is not substantial, the difference could well be compensated by the assurance of volume of work and long-term revenue visibility with continuing with the PMJAY.

Another factor that seems to be adversely affecting the perception of price adequacy is the different levels of complication in different types of patients under the same treatment package. Because of this, hospitals incur different costs for different patients in the same package, but receive a standard payment. This was reported by some hospitals during interviews as a matter of concern, apparently lowering hospitals' interest in catering to patients where the cost of care could be higher.

Low penetration of the quality certification system can be explained by the lack of utility value that hospitals could see in getting certified. Gold and Silver certificate is based on NABH accreditation levels and has no unique feature that can differentiate between accredited and certified accredited and non-certified hospital. Additionally, the incentive payment is linked to the hospital's accreditation status, irrespective of Gold or silver certificate status. No other tangible or intangible value could be discovered as linked to a gold or silver certificate. Bronze certificate, on the other hand, has a unique offering as non-accredited hospitals can achieve it. Thus, Bronze certificate hospitals can differentiate themselves from other non-accredited hospitals. It also carries an incentive under PMJAY, unavailable to other non-certified and non-accredited hospitals. These features of quality certificate levels indicate that with present guidelines, in future, Gold and Silver certificate adoption may not change much, while Bronze certificate may have some improvement in its acceptance subject to awareness creation. However, the level of impact the Bronze certificate can have on the quality of care will need to be observed closely.

It is important to note here that the time of data collection coincides with the time during which most hospitals were facing the effect of Covid-19. The impact of Covid-19 on normal routines of hospitals as well as patient access could not be ruled out. Due to this, there is a limitation on the extent to which the findings of our study, especially those related to physical observation and hospital interviews, could be generalised to the non-Covid time.

### Conclusion

Based on the findings and discussions presented, the study makes the following conclusions

- The interest of hospitals in catering to AB PMJAY patients differs as per hospital category, with the higher the level of accreditation of the hospital (thus higher price), the lower the interest in catering to AB PMJAY patients.
- From the patient satisfaction survey, the satisfaction levels were found to be lower in hospitals with a higher level of accreditation.
- NABH accreditation system was observed to be effective in identifying and classifying hospitals as per their capacity to provide quality care.
- Due to these features of NABH, its acceptance amongst hospitals is high. However, the cost involved in moving from entry-level certification to full accreditation is perceived to be high, which negatively influences the intention of low-resourced hospitals to upgrade their accreditation status. With the acceptance of NABH accreditation but the high cost of achieving



full accreditation, it is expected that in future, a large number of AB PMJAY empanelled hospitals will achieve entry-level certification, but relatively few, with adequate resources, will upgrade to full accreditation.

- With hospitals having multiple reasons to achieve NABH accreditation, it is uncertain as to how much effect financial incentives by PMJAY to accredited hospitals has on their decision to get accredited. The financial incentive could positively influence the interest of accredited hospitals in catering to more PMJAY patients. However, the additional incentive paid to FA hospitals does not seem sufficient considering the effort and cost involved in achieving and maintaining FA status as compared to ELC
- As against NABH accreditation, the Quality Certification system did not appear to be effective in value addition in quality improvement of hospitals. QC system also does not seem to provide any tangible or intangible benefits to hospitals. Due to this perceived lack of benefits, hospitals' acceptance of the QC system is low. The exception to this conclusion is the Bronze certificate which initiates the hospitals from no accreditation to a path of quality improvement journey and has some monetary incentive. Public hospitals have a very negligible adoption of the QC system.

## Recommendation

The recommendation is presented at two levels, first on modifications required in the existing mechanism of quality improvement and second on a comprehensive policy action needed for mainstreaming healthcare quality across the PMJAY empanelled hospitals

### Modifications required in the current system of quality improvement

- a. In the current system, hospitals are being provided with the quality certificate of three levels, out of which two certificate levels (Gold and Silver) are linked to NABH accreditation status. Since the study did not find any utility value for the Gold and Silver certificate, we recommend that these two certificates can be discontinued unless NHA has some specific future plans linked to these certificates. The purpose of the Gold and Silver certificate can be readily achieved by just identifying hospitals through their NABH ELC and FA status.
- b. Bronze certificate can continue and may be further strengthened, as it serves a specific need not fulfilled by any other accreditation. Incentives paid to Bronze-certified hospitals should be continued (and may be reviewed from time to time) to ensure that it creates interest in hospitals.
- c. Wider publicity and sensitisation of the Bronze certificate amongst hospitals should be undertaken for its maximum utility
- d. NABH accreditation system can be continued for identifying hospitals and linking the incentive payment as per their quality level

The current mechanism, however, may not be sufficient in mainstreaming comprehensive healthcare quality across the board. For this, a wider strategy will be needed to address all the defining components of healthcare. Specific recommendations in this regard are presented below

### Mainstreaming quality amongst PMJAY empanelled hospitals

To mainstream quality, as per our conceptual understanding of quality, we recommend that the policy must focus on achieving the following three objectives

- A. Improved customers' (patients and family), satisfaction
- B. Higher compliance with current professional knowledge in medical treatment
- C. Better achievement of desired healthcare outcome

We recommend a three-pronged strategy to address each of the objectives stated above

- A. Improving customer satisfaction by creating a competitive environment amongst accredited hospitals** – In a competitive market, customer satisfaction is a key strategy for private for-profit players to increase and retain their market share. Higher the competition, better value the players offer to their customers, driving their satisfaction upward. Such competition keeps the price in check; however, when the price is controlled, as is the case in AB PMJAY, the players are likely to compete by offering customer-defined quality.(35,36) Currently, under AB PMJAY, the lack of interest, especially amongst accredited and high-priced hospitals, is limiting

competitiveness in the market. To address this, we recommend the following actions that the NHA can think of

- **Price rationalisation for full accredited hospitals** - Pricing is the single greatest lever that can be used to influence the suppliers and quality of suppliers significantly.<sup>(12)</sup> Since the price was observed to be a concern, specifically for accredited - high-priced hospitals, a review of price plus incentive paid the need to be done in light of expectations of the accredited hospitals market. It is likely that the price plus incentive paid to the accredited hospitals will need to be revised upward, possibly having budgetary implications. In case of budget constraints, modifying the price/incentive of super-speciality treatment packages catered by full accredited hospitals can be considered as an initial step. This is important, considering the higher dependence of tertiary care provision on accredited hospitals. However, in this case, the accredited hospitals will need to be allowed to choose the speciality that they would like to empanel under PMJAY.
- **Factoring patient-specific conditions into package price** – Current treatment packages listed under PMJAY are based upon the treatment offered to a patient and do not adequately factor in additional patient-specific conditions, such as the presence of comorbid conditions, complications, age etc., that can influence the cost incurred by the hospital in treating them. This was raised as a matter of concern by some hospitals and needs to be addressed. Developed economies like the USA, European countries and Australia use an advanced and a rather complicated Diagnosis-related group (DRG) based payment system. DRG is a grouping system that classifies each patient's case according to the diagnosis and other characteristics, such as the patient's age, gender, case severity, co-morbidity and procedures performed.<sup>(38)</sup> Such a system is better placed to standardise the price to be paid as per efforts involved in treating a patient. DRG-based payment is now reported to be transitioning into developing countries as well, with some adaptations, different challenges and mixed results. (14) Several studies across different countries have documented evidence of improved health outcomes after the introduction of DRG based payment system. (13,15,16). Experiences of DRG in developing economies have been mixed and differ with regard to the number and scope of DRG, the choice of DRG variant, and adaptation to the country-specific context.

Keeping the experience of the DRG system of developed and developing economies in mind, we recommend that in a step-wise manner, PMJAY package lists should incorporate patient-specific variants and prices to be adjusted accordingly. Going forward, the effort should be to develop a comprehensive patient classification system on lines of DRG used in developed economies and use it as a standard to determine the price. Given the technical and administrative complexity inherent under the DRG system, we recommend that easy-to-incorporate variants, such as presence/absence of comorbid conditions and age above/below a particular level, should first be incorporated to classify the efforts in treating patients and modify payments accordingly.

- **Reducing credit duration:** In addition to price modification, some value can be offered to good quality accredited hospitals through the faster settlement of claims whereby claims from accredited hospitals could be put on a fast track mode, thus reducing the account receivable duration of these hospitals.
- **The incentive for numbers** – One effective option to motivate accredited hospitals in catering to more PMJAY patients is to pay them an incentive to achieve a specified number of claims in a defined period, which can be determined for the different speciality as per demand in that region. This strategy is increasingly and successfully used by several corporates, especially those operating in the gig economy, where numbers matter.

**B. Compliance with current professional knowledge by establishing STG and medical audit system** – Healthcare is complex and varies by patients as well as providers. However, it is possible to have some level of standardisation in healthcare treatment through utilising well-designed and mutually agreed standard treatment guidelines (STG) and a medical audit system.

- **Standard Treatment Guidelines** – Clinical protocols or Standard treatment guidelines are key to quality healthcare delivery.<sup>(17)</sup> Such guidelines provide mutually agreed clinical standards to which healthcare providers can work and against which they can be audited.<sup>(17)</sup>. While



the work on the development and implementation of STGs has already been initiated, its effectiveness needs to be assessed, and efforts need to be strengthened towards ensuring its wider acceptance with STG

- Medical audit system – Medical audit has been established as a valuable tool to improve healthcare quality.<sup>(18,19)</sup> We recommend that the best use of this tool be made within the PMJAY system to enhance clinical quality. Having STGs in place will be a precursor to establishing an effective medical audit system. This is required to ensure that the STGs, that have been painstakingly created are increasingly being complied with. The medical audit can be done at two levels
  - \* A medical audit during claim processing – This can be a basic audit covering key points of STG, using a standard form, and is done for all claims submitted. This will largely be for administrative use of claim processing. At present, this is being done as a part of claim processing; however, auditing against key STG points will improve the acceptance of audit findings amongst empanelled hospitals
  - \* Medical audit for clinical quality – This can be a detailed audit of a sample of cases conducted by qualified medical professionals periodically. The purpose of this audit is not to identify individual non-complying hospitals but to understand the level of compliance being followed at an overall level and as per categories of hospitals. Such a continuous medical audit system will produce periodic data, which will be useful for understanding how compliance with clinical standards is shaping up over time.

**C. Better achievement of health outcomes through performance-linked incentive system:**

While price rationalisation and compliance to treatment protocol can leverage the healthcare quality, enhancing the commitment of healthcare providers in realising desired health outcomes through linking it to financial incentives will help to fulfil the gaps that remain. Payment linked to the desired outcome as a method to drive quality is getting high importance by healthcare systems worldwide.<sup>(20)</sup> performance-linked incentive in healthcare is a concept of using payment as a method to motivate healthcare providers to put in their best effort to achieve desired healthcare outcomes. Some noteworthy examples of payment linked to outcomes include the value-based programme of the Centre for Medicare and Medicaid Services, USA; Quality and outcome framework of National Health Services, UK; and CAPI (Contrat d'Amélioration des Pratiques Individuelles) of France.

The above examples show that performance-based payment is feasible in healthcare. However, an extremely customised approach is required for any healthcare system, taking into consideration what they want to achieve/improve and an understanding of the best incentive/disincentive to influence the behaviour of providers in realising those outcomes.

We recommend that NHA consider developing a customised performance-based payment model keeping the Indian context in mind and catering to those outcomes that are desired under AB PMJAY.

We suggest two options that NHA can consider for establishing such a model.

**a. Incentives linked to performance on the individual quality parameter –**

Identifying those outcomes that indicate quality performance can also be measured reliably. For each outcome measure, a benchmark can be established (can be modified periodically) based on the national average or state average or by taking reference from the research literature. The baseline can be used to judge a hospital's performance using standard criteria, such as x percentage better than the benchmark or better than benchmark value by one standard deviation, etc. Appropriate monetary or non-monetary incentives (and disincentives) can be linked to hospitals based on how well they meet the criteria. For example, the baseline for re-admission rate can be established, and hospitals whose patients have lower readmission rates than the benchmark can be incentivised. Similarly, hospitals whose patient satisfaction rating is more than one standard deviation of the overall average can be incentivised.

**b. Incentives linked to the overall quality index score of the hospital –**

Another option could be to create an index by incorporating all outcomes that can be measured reliably and indicate quality performance. Each outcome measure can be assigned weight as

per its importance, and an overall quality index score of hospitals can be created. Hospitals can then be ranked as per their score, and criteria can be used to determine incentive/dis-incentive as per their rank.

The three-pronged strategy recommended above will cater to an all-around quality improvement of healthcare services. Each part of the strategy can be individually crafted for an effective result, and when implemented, they will complement each other. For example, establishing STG will support the development of measurable outcomes, enabling NHA to use it as a reliable measure for performance-linked incentives. Similarly, creating a competitive environment will push hospitals to improve their quality score to gain image and market share.

The recommendations in this brief have been presented considering the established theories of healthcare quality and examples of models implemented in different parts of the world for quality improvement.

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This policy brief assesses the early impact of recent efforts to mainstream quality of care under India's Ayushman Bharat Pradhan Mantri Jan Aarogya Yojana (AB PM-JAY).

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