national health authority
सत्यमेव जयते

प्रधानमंत्री जन आरोग्य योजना
आयुष्मान भारत
PM-JAY

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Health systems research for AB PM-JAY:
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).

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List of acronyms

AB PMJAY	Ayushman Bharat Pradhan Mantri Yojana
CMS	Centre for Medicare and Medicaid Services
DIU	district implementation unit
ELC	entry level certification/certificate by NABH
ERR	excess re-admission ratio
FA	full accreditation by NABH
GP	general practitioner
ISA	implementation support agency
ISQua	International Society for Quality in Healthcare
NA	not accredited/certified by NABH
NABH	National Accreditation Board for Hospitals and Healthcare Providers
NHA	National Health Authority of India
NHS	National Health Services, United Kingdom
PSQ-18	patient satisfaction questionnaire – 18
QC	quality certification / quality certificate
SHA	state health agency
SHCO	small healthcare organization
STG	standard treatment guidelines
TAT	turn-around time
TPA	third party administrator
UHC	universal health coverage

Executive summary

Background: 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 poor families in India. It needs to be complemented by an assurance of a sufficient quality of care at the empanelled hospitals to realize the goal of Universal Health Coverage (UHC). National Health Authority (NHA), in collaboration with the Quality Council of India (QCI), has initiated a Quality Certification system, in line with the prevalent NABH accreditation system, for improving the quality of care at the empanelled hospitals. While a system for certifying the quality of hospitals has been put in 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 quality improvement and quality assurance of care being provided by the empanelled hospitals to PMJAY beneficiaries.

Objectives: The objectives of the study were to,

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: The study used a mixed-method approach involving secondary and primary data. Following an assessment of the current level of penetration, secondary data on profile details of empanelled hospitals across the country, along with their accreditation and quality certification status, was obtained from NHA. Penetration was calculated as the proportion of eligible hospitals that acquired quality certificates as of date. The proportion was compared between public and private hospitals, nationwide and state-wise, as per the size of hospitals and the duration of empanelment.

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.

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. The 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. 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: Findings from the **assessment of QC penetration** showed very low penetration across all classifications. Public hospital has a minuscule presence in accreditation and certification system. 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 nearly negligible in empanelled public hospitals. 92% of all NABH accredited hospitals and 98% quality certified hospitals are in private empanelled hospitals. Overall, 26.5% of NABH accredited hospitals have obtained Gold/Silver certificates, with a noticeable difference state-wise. In the Bronze certificate category, the penetration has been mere 1.4% overall. State-wise variation is less than gold and silver certification. Hospitals that are currently not certified but registered for the process are extremely few. Within states, except for Telangana, all other states have less than 1% of their hospitals registered for QC. For Gold and Silver levels, the data doesn't show any noticeable difference in hospital size. No statistically significant difference could be found. For Bronze certificate and registered hospital categories, the statistical analysis suggests that the proportion in large hospitals could be significantly high compared to mid and small hospitals. 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. For hospitals that were empanelled more than two years back, no hospitals were found to have NABH accreditation or QC.

Findings from **direct observation** of certified hospitals reflected a visible difference between the hospitals belonging to NA, ELC and FA, all three components. FA hospitals had the best infrastructure, processes and outcomes, followed by ELC and NA. Variation within hospitals in the same accreditation category was highest in NA hospitals and least in FA hospitals. Findings indicate the NABH accreditation level's ability to classify hospitals based on their structure-process-outcome quality.

Claims analysis showed statistically significant lower TAT for Gold and silver certified hospitals than the overall average. Similarly, NABH accredited hospitals also had a lower TAT. Hence Gold/Silver certified hospitals that also have NABH accreditation could have better in-patient care documentation and effective updation of data update on the claim processing portal. Gold-certified hospitals submitted the highest value per claim, followed by Silver, while Bronze-certified hospitals had the least value per claim submission. NABH accredited hospitals also had submitted higher value claims. The differences were found to be statistically significant. Gold/Silver certified and NABH accredited hospitals seem to be comparatively better equipped to provide an advanced level of care than Bronze and non-NABH hospitals. Gold and silver-certified hospitals show a noticeably higher rejection percentage, while Bronze has a much lower rejection rate.

Similarly, NABH hospitals have a higher rejection percentage. Most of these rejections could be because of higher than permissible claims raised by these hospitals. From all claims in the sample, the hospitals claimed a total of 315 unique treatment packages. Out of this, just nine packages (3.2%) accounted for about 50% of all the claims. 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 positively associated with non-NABH hospitals and one package with NABH hospitals. This indicates a preference for non-NABH hospitals by the majority of the patients.

Based on qualitative interviews of the hospitals, the accredited ones feel that NABH accreditation positively impacts the quality of care. About half of the NA hospitals believe that NABH accreditation should improve the quality. Other than quality improvement, all hospitals stated that the NABH accreditation helps in positive image building within the hospital industry. Incentive package rates by PMJAY were also cited as a benefit of NABH by a few hospitals. All FA hospitals shared that they will continue with the NABH accreditation system and will upgrade as accreditation standards are revised. Amongst ELC hospitals, several hospitals were uncertain about getting FA. Few hospitals are content with ELC and do not intend to go for FA at present.

Silver and Gold certified hospitals do not feel any tangible or intangible benefits of QC other than just having one more certificate and the hope that it may get them some benefit in the future. The benefit of QC in brand image enhancement was also not reported by any hospital. The bronze-certified hospital had some positive feelings about the certificate and reported that they are encouraged to try for ELC. Any hospital reported no inherent reason for QC. Almost all hospitals said that they had not given much thought to what would they do in future, but as of now, they don't see any problem in continuing with QC

Most hospitals were dissatisfied with the package rates offered; however, several smaller hospitals reported that they could manage within the given rates. Dissatisfaction with the claim management process was reported largely by smaller hospitals. Smaller hospitals intend to continue with PMJAY in future. Few large FA hospitals intend to discontinue PMJAY, primarily due to low package rates

Hospitals that do not acquire QC were either not aware or did not feel the need to acquire QC. Feedback received from hospitals for quality improvement includes revision of package price, differential pricing, streamlining of claim processes and creating awareness amongst beneficiaries about Quality Certificates.

From the patient satisfaction survey, similar findings emerged from patient satisfaction scores, overall hospital rating and proportion of patients complaining. Contrary to general expectation, NA hospitals seem to have been providing a better experience to patients compared to ELCs. In contrast, FA hospitals have been perceived as the least satisfactory among the three categories. The difference between the satisfaction levels of FA and ELC is notably greater than the difference between satisfaction levels of ELC and NA. Having to or have been asked to pay out of pocket was the most frequently reported complaint by the patients, followed by the poor clinical outcome and lack of empathy.

Assessment of quality improvement initiatives shows that silver and gold certificates depend upon NABH accreditation for identifying quality hospitals. Any dilution in the effectiveness of NABH in assessing or identifying a hospital's quality will also dilute the ability of silver and gold certificates to determine a hospital's quality. While the Bronze certificate is not dependent on any other accreditation system, it primarily aims to initiate the hospital's quality improvement journey. Hence, on its own, the bronze certificate may not be sufficient in mainstreaming the level of quality that is desired in empanelled hospitals, and progressive levels of quality will be required. The benefit to hospitals for getting certified is fairly limited. Except for a 5% premium on the package price for the bronze certificate and future expectation of benefit, the design of the QC programme does not indicate any noteworthy benefit that can be perceived by empanelled hospitals for getting QC. The cost of obtaining the silver certificate for ELA hospitals and the gold certificate for FA hospitals is close to nil. It may not be a barrier for ELA and FA hospitals. The cost of obtaining the bronze certificate is largely indirect and depends upon the existing condition of the hospital. The indirect cost of progressing from Bronze to Silver does not appear to be significantly high. However, the direct cost, in terms of accreditation fees for ELA, can be a deterrent to some hospitals. Both Direct and Indirect costs of progressing from Silver to Gold certificates can be significantly high due to major differences in the requirements of ELA and FA. Even though the inherent benefits are lacking, since the cost of getting certified for ELA and FA hospitals is close to nil, there is a good possibility of such hospitals still getting certified with appropriate awareness and publicity. However, for hospitals that are not already accredited, it is unlikely that they will go for ELA or FA by NABH, primarily for silver or gold certificates, especially if the hospital perceives the indirect cost of getting accredited as high. The Bronze certificate does have some inherent benefits. Hence, with appropriate publicity, the likelihood of creating interest in hospitals for achieving bronze certificates seems fairly high compared to silver and gold certificates. There is a theoretical possibility that empanelled hospitals that achieve ELA or FA may see an increase in their utilization. If the price-volume combination offered by PMJAY is not competitive enough, their interest in continuing serving PMJAY may reduce purely for business reasons. A strategy to combat such a situation may be called for

Conclusion and Recommendations: The study concludes that 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 is the interest in catering to AB PMJAY patients. NABH accreditation system was observed to be effective in identifying and classifying hospitals as per their capacity to provide quality care. NABH accreditation system is also accepted as a certificate of value by the hospitals. The Gold and Silver certificate of quality certification system did not appear to be contributing value to the quality improvement of hospitals. In contrast, the bronze certificate was found to have some distinct value addition.

The study recommends that gold and silver certificate may be discontinued as NABH accreditation levels can directly be used for classifying hospitals based on quality. Bronze certificate can be continued and may be strengthened further. The study also recommends undertaking a more comprehensive

policy measure to mainstream quality. For this, a three-pronged strategy comprising of - creating a competitive environment within PMJAY empanelled hospitals; establishing an STG and medical audit system and establishing a performance-linked incentive system - is recommended

1

Introduction

1.1. Background

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 poor 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 hospitalizations 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 realize 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 human' and the follow-up study 'Crossing the quality chasm'.(1,2) Several other studies have reinforced the criticality of quality in healthcare. It is well recognized that poor quality causes people to avoid using services, thus making it a barrier to universal health coverage, independent of access.[3] Adverse implications of not taking quality along while expanding access have been reported.[4]

Recognizing 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 a quality certification system inspired by the NABH accreditation system that operates under the ambit of 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 determine its effectiveness and sufficiency in mainstreaming the quality of care amongst hospitals empanelled with PMJAY. This study is carried out to identify and assess policy measures necessary for mainstreaming quality improvement and quality assurance of care being provided by the empanelled hospitals to PMJAY beneficiaries. The study will provide inputs to PMJAY for strengthening the existing actions taken for quality improvement and undertaking additional actions as needed.

1.2. Review of literature

Although the quality in healthcare has been defined in several ways, the most widely 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.[2] The definition also states that for healthcare to achieve quality, it must be safe, effective, timely, efficient and people-centred. Quality in healthcare is a broad concept which entails multiple dimensions, with patient safety being the most important dimension that quality must achieve.

Quality and safety in healthcare have long been a matter of concern for healthcare professionals and healthcare organizations. In the landmark report 'To err is human: building a safer health system' by the Institute of Medicine (IOM) in 1999, the severity of the problems resulting because of the lack of quality in healthcare was reported, which attracted the attention of media, policymakers and healthcare professionals alike.[5] The report estimated that close to 98,000 people die in a year for reasons that can be attributed to medical errors. The financial costs resulting from these errors were estimated to be big enough to be counted among the top public health problems. As identified in the report, the reasons for such losses were due to a lack of quality and safety measures in healthcare delivery across hospitals. This report was followed by another report by IOM on 'Crossing the Quality Chasm' that recommended improvements required in healthcare for achieving patient safety, care effectiveness, patient-centeredness and timeliness.[6]

WHO has regarded healthcare quality as 'crucial' for attaining the goals of universal health coverage (UHC) and the health targets of Sustainable Development Goals (SDGs). One of the objectives of UHC is to provide quality care to everyone and everywhere, irrespective of their capacity to pay for it.[7] Over decades, the quality of care has remained a matter of concern even in places with developed health systems. There is also a wide difference in the delivery of standard healthcare within and between healthcare systems.[8]

Quality care should not be in the scope of only the rich and a far-fetched dream for others. It should be at the core of every health system. Millions of people every year in low-and middle-income countries die of treatable conditions. More than half of the deaths by the conditions manageable by the health system are due to poor quality of care.[9] Quality of care given is now a bigger obstacle in reducing mortality than access to healthcare.[9] Almost 33% of people in low- and middle-income countries cited negative experiences with respect to time, respect and attention in their healthcare systems.[10] Quality of care is worse for vulnerable groups, including the poor, adolescents and those with stigmatized conditions. High mortality rates for treatable conditions like injuries, maternal and newborn complications and vaccine-preventable diseases in low- and middle-income countries show the pressing need for quality care. Poor quality of care leads to other deleterious outcomes like needless health-related suffering, lack of trust in the healthcare system, catastrophic expenditure and waste of limited resources.[4]

Amongst various methods to institute quality in healthcare organizations, accreditation of hospitals is considered one of the most relevant mechanisms to achieve improvement in the quality and safety of healthcare.[11] Accreditation is the independent and systematic assessment of a hospital against defined standards and recognition of a certain level of achievements of those standards by an external body.[12] Several studies have examined and confirmed the positive effect of accreditation on healthcare quality. (13–19) A systematic review of 26 papers by Alkhenizan and Shaw (2011) showed significant improvement in clinical outcomes in accredited hospitals but couldn't draw any conclusions about other dimensions.[20]

While most studies indicated the positive effect of accreditation, few were either negative or inconclusive. (21–25) The systematic review by Greenfield and Braithwaite (2008) reported inconsistent findings. It reported that out of ten categories, only in two categories, promoting behaviour change and professional development, the findings were positive and consistent. Still, in the other eight categories, the studies reviewed were inconsistent.[20] Another systematic review by Brubakk et al. (2015), which was based on 20 studies, also had inconsistent findings. (26) 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.[27,28]

The literature suggests that quality in healthcare is crucial and must be addressed by a scheme like AB-PMJAY. However, the literature shows mixed results in the role of accreditation in addressing quality concerns. As the above literature is based on various accreditation systems, which could be very different from each other in standards, assessment and level of implementation, no firm conclusion can be made about a specific accreditation system.

Health financing policy objectives which are derived from overall health system goals include improving 1-Quality; 2-Equity, 3-Efficiency, 4-Transparency and 5-Accountability. (29) Therefore, it is important to analyse the effectiveness of PMJAY in leveraging its purchasing power to improve the quality of care as an intermediate goal towards achieving health system goals. Since the National Health Authority (NHA), along with the Quality Council of India (QCI), has started the quality certification process to enhance the quality standards across all the AB-PMJAY empanelled hospitals, it would be imperative to study and understand how and whether this certification/accreditation mechanism will impact the quality of care being rendered to the scheme's beneficiaries, and in what ways can the system be strengthened to meet the objectives.

2

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 objectives enumerated below:

2.1. Objectives

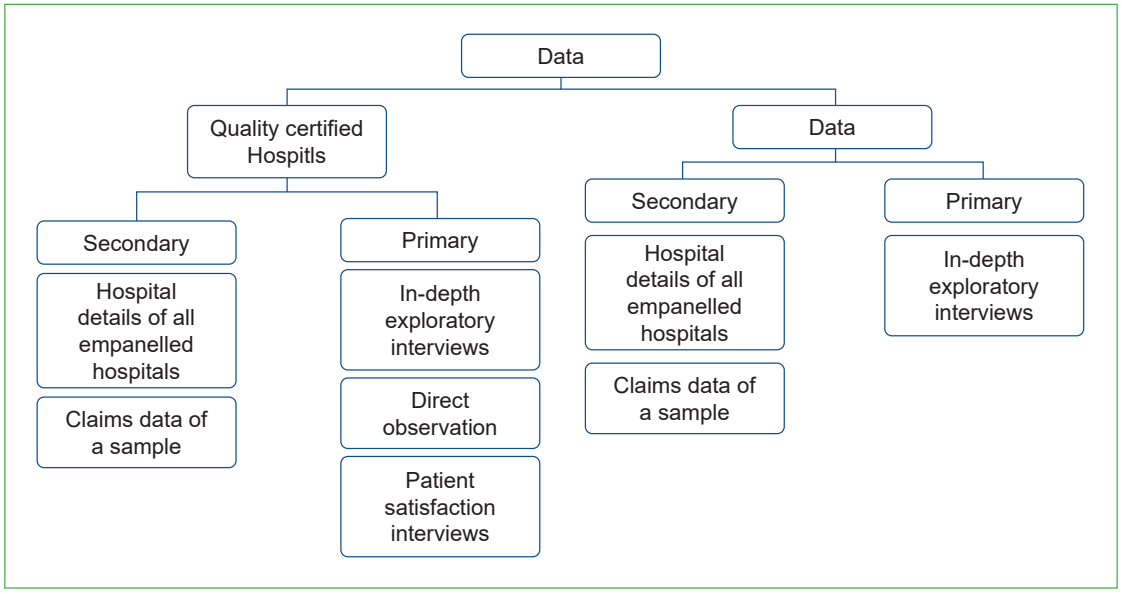
1. Assess the current level of penetration of PMJAY's quality certification mechanism amongst empanelled hospitals and explore factors hindering the same
   - 1.1. To describe the extent of penetration of quality certification across geography and certification levels
   - 1.2. To identify the categories of hospitals that are adopting quality certification and those that are not
   - 1.3. To explore the views and perceptions of empanelled hospitals about quality improvement measures taken under AB-PMJAY and to assess their feedback for improvement
2. Examine the hospitals that have acquired a quality certificate to understand their level of quality in comparison with non-certified hospital
   - 2.1. To assess the quality of structure, process and outcome in hospitals with different levels of quality certificate
   - 2.2. To assess the effect of quality improvement measures of AB-PMJAY on patient satisfaction
   - 2.3. To evaluate the data on claims submitted by these hospitals to identify patterns reflective of the quality of care in hospitals with different certification levels and accreditations
3. Analyse the existing methods of quality assurance and improvement and identify potential areas for strengthening
   - 3.1. Review the policies, guidelines and system for quality in light of established models of quality
   - 3.2. In reference to the findings from the above objectives, recommend options for action for strengthening and mainstreaming quality amongst PMJAY hospitals

2.2. Method and data

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 summarizes the data for the study.

Fig. 1: Data for the study

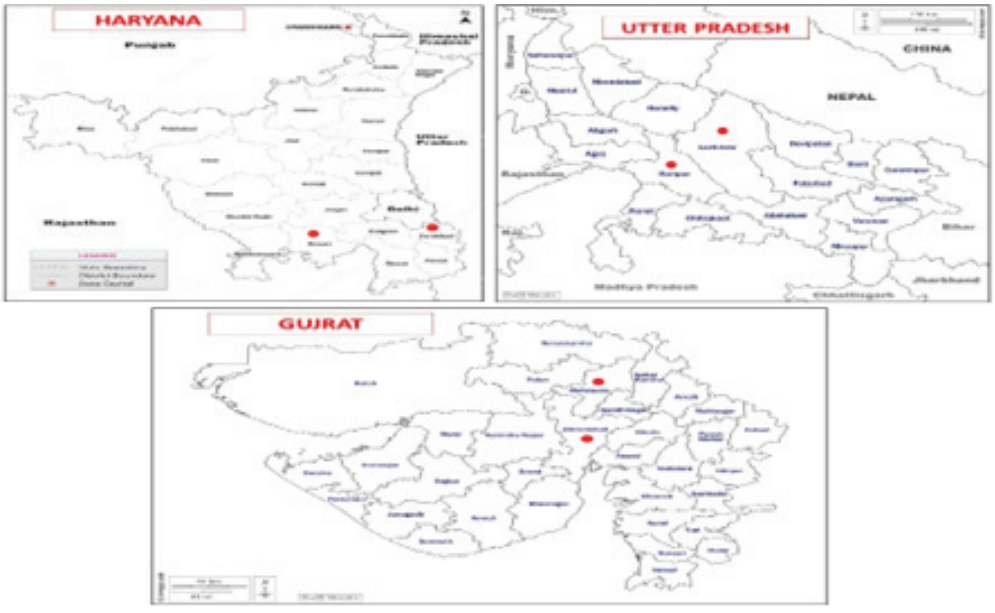


Study locations

The data of all empanelled hospitals across the country was taken to assess the penetration of the QC system. A sample of 2000 claims from hospitals with different quality certificate levels from 9 states was studied for claims data.

For direct observation of a sample of certified hospitals, the study was conducted in three states purposively selected based on the representation of certified hospitals in gold, silver and bronze categories, namely, Haryana, Uttar Pradesh and Gujarat. Further, for primary data collection, two districts were again purposively selected from each state based on the number of hospitals empanelled under the AB-PMJAY scheme (Fig..2).

Fig. 2: States and districts selected under the study



Direct observations

Data for assessing the quality of structure, process and outcome in hospitals with different levels of the quality certificate was primarily collected through direct observation of the certified hospitals using custom-designed hospital observation checklists. Firstly, basic details for profiling the hospital were collected in a tailored hospital profile format (Annexure I). Then the hospital observation was done by taking a detailed round of all the departments and areas of the hospital and by interacting with staff and in-charges. Observations were recorded in a custom-made 'hospital observation checklist' (Annexure-II). The observation and data collection was done by investigators trained in quality assessment of the hospital. The checklist was filled out after examining the practices followed at the hospital. In addition to the direct observation method, verification of hospital records (medical and non-medical) against a standard checklist was also conducted to complete the triage of the data. The data collected by the investigators were cross-verified by the research team through their own observation of a sample of points from the checklists in all hospitals under the study. A list of hospitals where direct observations were conducted is given in Annexure III.

In-depth interviews

In-depth interviews were conducted in selected certified and non-certified hospitals. The perspective of hospitals on quality certification mechanisms was explored through in-depth qualitative interviews of hospital management using a set of guiding questions and a semi-structured format (Annexures IV and V). For primary data collection (including in-depth interviews and observation), a total of 21 certified and 18 non-certified hospitals were selected from 3 districts, each from all 3 study states. The respondents of the in-depth interviews were mainly the head of the hospital and the head of the quality department. Annexure VI gives the details of the stakeholders interviewed in this study. All the interviews were conducted with the verbal consent of the stakeholders.

Interviews were recorded where permission was obtained to do so. In addition to these recordings, detailed notes were prepared, and further used for coding and extracting themes. Along with the interview coding, all the researchers recorded memos for every day of the field visit, essentially recording the observations and impressions. The purpose of this exercise was to transparently record the observations which could be connected with the codes from the interviews and create theoretical evidence of the larger themes emerging.

Patient satisfaction survey

A structured patient satisfaction survey was conducted on patients of the twenty-one-quality certified hospital selected for this study. The sample includes 300 patients who are PMJAY beneficiaries and have taken treatment in any of these 21 hospitals within the last three months. Currently admitted patients were excluded to avoid the possibility of biased responses due to concern over adverse consequences on their healthcare. Due to the confidentiality of personal data, details of patients could not be obtained from the central database at NHA. Hence, the study hospitals were requested to voluntarily share the details of patients who have taken treatment at their hospital in the last three months. The details include the patient's name, phone number, age, gender, date of admission and discharge.

Telephonic contact with all 300 patients was attempted by a trained research assistant of the project. About 100 patients could not be contacted due to either incorrect telephone numbers or phone numbers being switched off. Thus, the total sample size for this part of the study was 200. An established instrument, the Patient Satisfaction Questionnaire-18 (PSQ-18) (Annexure-VII), was used to conduct the survey.[30] This tool consists of 18 closed-type questions and is typically used to evaluate patients' satisfaction with medical services in six main domains: General Satisfaction, Technical Quality, Interpersonal Manner, Communication, Financial Aspects, Time Spent with the Doctor, and Accessibility and Convenience. We added one more question on overall rating, where a 10-point rating scale was provided.

In the end, each patient was asked to provide a descriptive remark about their experience with the hospital, with an objective to capture their specific complaints, if any. The remarks were qualitatively analysed to identify those that reflect complaints. These were grouped as per their type, and frequency count was done in combination with the accreditation category of their hospital.

Verbal consent was obtained prior to initiation of the interview, and each interview was recorded with their permission. The research team randomly verified the data from the phone recordings and ensured the authenticity of the data collected. The average time required to complete one telephonic interview was about 10-12 minutes. Data analysis was done as per the scoring instructions of PSQ-18. Integrated scores were calculated for all hospitals and for FA, ELC and NA hospitals. Comparisons were made using descriptive statistics.

Quantitative data sources and analysis

To assess the level of penetration of QC, secondary data for all empanelled hospitals under PMJAY was used. Following are the data points for which the data was obtained and analysed. Location of hospitals (state, district, block), ownership (public, private, for-profit, private, not-for-profit), quality certificate (bronze, silver, gold, none), other accreditations (NABH, JCI, NQAS, etc.), bed complement, specialities empanelled and dates of empanelment, accreditation, quality certification and progress to next quality level. The data was analysed to calculate measures related to adopting quality standards. These measures were used for comparison and drawing trends. Based on data and measures, a descriptive analysis of how well the quality certification system has penetrated into the empanelled hospitals was done. The analysis highlighted the overall penetration and variation in penetration based on region, certification level and public-private ownership of hospitals. Direction and momentum of trend in acquiring quality certificates were also analysed under this.

Data of claims were analysed to identify patterns reflective of quality amongst accredited and non-accredited hospitals. The data consists of a sample of patients who took treatment under AB-PMJAY at an empanelled private hospital. The sample consists of randomly selected claims of 2000 patients – 1000 from 30 different hospitals having quality certificates and 1000 from 30 different hospitals that do not have quality certificates. The samples were taken from multiple states and only within the latest one month. The secondary data was obtained from NHA after they communicated the sample criteria. The sample data was analysed for turnaround time (TAT) for claim settlement, Length of stay, Claimed, paid and rejected amount, and frequent packages. Basic statistics are used for analysis.

For all the parameters analysed, the comparison was made between Gold, Silver, Bronze and non-certified hospitals and between NABH and non-NABH hospitals.

Timelines - The secondary data for the study was collected for the period up to June 2021. Primary data collection was done in July and August 2021.

3

Quality certification and its penetration

3.1. Quality certification system

In collaboration with QCI, NHA has initiated a Quality Certification (QC) system to improve quality standards across the country's hospitals, specifically amongst those empanelled under PMJAY. The initiative aims to build a network of hospitals that provide quality assured care to patients. Through the QC system, NHA and QCI endeavours to help the hospitals improve their quality and get a certificate as a mark of recognition.

The scheme involves three levels of certification; Bronze, Silver and Gold. Silver and Gold certificate is linked to the NABH accreditation level of the hospital, while Bronze certification has its process. Eligibility, process and benefits under each level are briefly described below.[31]

Bronze certificate - Bronze is the pre-entry level certificate for which any empanelled hospitals without prior accreditation are eligible to apply. Non-empanelled hospitals with a minimum of 25 beds and having no prior accreditation are also eligible to apply. There is a nominal fee for the application and certification process.

To obtain the Bronze certificate, the hospital must comply with a set of pre-defined standards outlined in the following five chapters.[32]

1. **Key inputs:** This chapter broadly covers the standards related to the structural part of the hospital, including facility infrastructure, human resources, medical equipment and other resources
2. **Clinical services:** Standards related to policies and processes necessary for clinical services are covered in this chapter
3. **Support services:** The standards under these chapters cover support and administrative processes like cleanliness, infection control, security, facility management, water and power supply, dietary, laundry, legal compliances etc
4. **Patient care:** Standards related to patients' rights, patient-friendly processes, consent policies, medical record-keeping etc., are covered here
5. **Health outcome:** This chapter has standards for measuring healthcare outcomes like OPD and IPD census, mortality rate, the average length of stay, HAI rates etc

The process involves an online application, followed by a desktop assessment of the documents submitted by the hospitals. After completion of non-compliances raised in desktop assessment, onsite

assessment is conducted by trained assessors. The hospital is expected to close the non-compliances raised in the on-site assessment within a given period.

The certificate is valid for two years. The hospital is expected to progress to the Silver certificate during this period.

Silver and Gold Certificate: Silver is the next level of quality certificate, while Gold is the highest level. These two certificates are linked to the NABH accreditation levels of the hospitals and are applicable only to AB-PMJAY empanelled hospitals:

1. Silver Certificate - Hospitals having Entry Level Certificate (ELC) of NABH
2. Gold Certificate - Hospitals having Full Accreditation (FA) of NABH either as a hospital or Small healthcare organization (SHCO)

The application process is online, and only desktop assessment is conducted to verify the documents submitted by the hospital in support of their eligibility. Any non-compliances raised during the desktop assessment must be acted upon and closed by the applicant hospital. This is verified in the second round of desktop assessment, following which the applicable certificate is granted. The validity of the certificate is co-terminus with the applicable NABH accreditation.

Penetration of QC scheme: Since the purpose of the QC system is to provide care of a standard level of quality to AB-PMJAY beneficiaries across the country, it is crucial that the scheme is adopted by the empanelled hospitals. The level of penetration of the QC scheme needs to be assessed periodically to understand how well is it being received amongst the hospitals. Under this study, we explored how much has the scheme penetrated empanelled hospitals after more than two years of its rollout.

The data for this assessment consists of secondary data received from QCI through NHA. This data consists of some basic details of hospitals, including name, unique ID, public or private, location, bed strength, accreditations and quality certificate. Frequency distribution and descriptive statistics have been used for analysis. Wherever required, statistical analysis is done for inferential analysis.

3.2. NABH and hospitals empanelled under PMJAY

National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board under the Quality Council of India (QCI) that runs an accreditation programme for healthcare organizations in the country. The accreditation by NABH is considered a mark of quality. To obtain accreditation, a healthcare organization has to implement a set of pre-defined accreditation standards, which are then independently assessed by trained assessors. On successful demonstration of compliance with the stated standards, a healthcare organization become eligible for the grant of accreditation.

For hospitals, NABH has the following types of accreditations available.[33]

1. Full Accreditation (FA) of Hospitals - This is the highest level of accreditation available for hospitals from NABH. Hospitals can obtain this as a large healthcare organization with more than 50 beds or a small healthcare organization (SCHO) with less than 50 beds
2. Entry-level certification (ELC) is available for any hospital that endeavours to become accredited as a starting point. Requirements to be fulfilled under ELC is lesser than that required for accreditation

Since the silver and gold certificates are linked to the NABH accreditation status of hospitals, we start by looking into how much interest NABH accredited hospitals shown in the AB PMJAY scheme. As per the publicly available list (as of September 22, 2021) on the NABH website, there are 2,822 hospitals with some type of accreditation (823 hospitals with full accreditation, 445 SHCO with full accreditation and 1554 hospitals with entry-level certifications).[34] The data on hospitals empanelled with AB PMJAY shows a total of 1118 hospitals with NABH accreditation of any type, making up 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 NABH 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 realized, participation of accredited hospitals in the PMJAY scheme could be important, as these hospitals are recognized as good-quality hospitals. The reason for disinterest amongst this group of hospitals needs to be explored. Further sections of this report highlight some concerns that could be the reasons for non-participation.

3.3. Public and private hospital's 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 accredited	34	-	34
Gold certified	2	135	137
Silver certified	10	196	206
Bronze certified	1	164	165
Registered	47	178	225

** Due to many missing or erroneous data about the accreditation type (FA or ELC), they are presented together as NABH accredited*

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% of 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. From the data, it can be considered that, as of now, 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.

3.4. Nationwide and state-wise penetration

Several states do not have any NABH accredited hospitals under PMJAY empanelment. For states where five or more NABH accredited hospitals are empanelled, the proportion of certified and registered hospitals is given in Table 2. Data from Tamil Nadu and Uttarakhand have been excluded due to major inconsistencies. States which have less than five accredited hospitals empanelled with PMJAY are clubbed under others.

Table 2: Empanelled, accredited and quality certified hospitals - state wise

State	Empanelled	NABH	Gold	Silver	G/S prop*	Bronze	Bronze Prop**	Registered	Reg prop#
Assam	181	26	1	3	15.4%	6	3.9%	0	0.0%
Bihar	269	6	0	3	50.0%	5	1.9%	0	0.0%
Chandigarh	18	6	1	0	16.7%	0	0.0%	0	0.0%
Chhattisgarh	444	14	0	1	7.1%	3	0.7%	1	0.2%
Delhi	55	41	2	1	7.3%	0	0.0%	0	0.0%
Goa	13	7	0	0	0.0%	0	0.0%	0	0.0%
Gujarat	650	48	18	8	54.2%	6	1.0%	0	0.0%
Haryana	418	135	51	58	80.7%	30	10.6%	1	0.4%
Jharkhand	512	6	1	0	16.7%	8	1.6%	0	0.0%
Kerala	517	111	3	3	5.4%	10	2.5%	4	0.8%

State	Empanelled	NABH	Gold	Silver	G/S prop*	Bronze	Bronze Prop**	Registered	Reg prop#
Madhya Pradesh	661	284	1	6	2.5%	3	0.8%	0	0.0%
Maharashtra	680	12	2	0	16.7%	0	0.0%	0	0.0%
Puducherry	12	8	0	3	37.5%	3	75.0%	0	0.0%
Punjab	636	149	23	20	28.9%	15	3.1%	2	0.3%
Telangana	14	12	3	0	25.0%	0	0.0%	1	9.1%
Uttar Pradesh	1601	104	11	34	43.3%	30	2.0%	1	0.1%
West Bengal	7	7	1	0	14.3%	0	-	0	0.0%
Others	3463	10	3	0	30.0%	9	0.3%	2	0.1%
Total	10151	986	121	140	26.5%	128	1.4%	12	0.1%

** Proportion of gold and silver certified hospitals to NABH accredited hospitals*
*** Proportion of bronze certified hospitals to non-accredited empanelled hospitals*
 # Proportion of registered hospitals to non-certified hospitals

Overall, 26.5% of NABH accredited hospitals have obtained Gold/Silver certificates so far. 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.

State-wise variation is noticeable. From 0% penetration in Goa to as high as 81% in Haryana, the level of adoption has differed from state to state. From the available data, no specific factors could be identified 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, as of present, the overall penetration of the QC system is low for all QC levels. The variation in the Gold/Silver category is higher in state-wise penetration compared to Bronze. Registered hospitals are very less in numbers and proportion.

3.5. Quality Certification as per hospital size

We assessed the penetration of QC in hospitals of different sizes (Table.3). The hospitals were grouped into three categories, as per their number of beds

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

Table 3: Empanelled, accredited and quality certified hospitals - as per 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%

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.

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, $X2$ (1, N = 12301) = 0.846, p = .357. For bronze certificate and registered hospital categories, the statistical analysis show that its proportion in large hospitals is significantly higher than mid & small hospitals $X2$ (1, N = 12301) = 6.651, p = .009 for Bronze and $X2$ (1, N = 12301) = 60.681, p = .000 for registered hospital category.

The findings suggest that the overall penetration is low across all hospitals. There is no difference in the penetration levels in the gold and silver category 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 than mid and small hospitals, as is evident from registered hospitals' data.

3.6. 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 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. (35) We looked into how the hospitals that were empanelled earlier in the scheme compare with the hospitals that recently adopted 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 4)

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

Table 4: 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%

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 the data of these hospitals about their accreditation may be missing or not collected.

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. (X2 (1, N = 9827) = 159.68, p = .000 for Gold and Silver certificate and X2 (1, N = 9827) = 51.29, p = .000 for Bronze and Registered hospitals).

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 some impact on the interest of accredited hospitals. However, the bulk of accredited hospitals that empanelled new had entry-level accreditation.

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

3.7. Limitations

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 observation indicates that there could be some inaccuracies in the data; for example, in a couple of states, the number of Gold and Silver certified hospitals are more than the number of empanelled NABH accredited hospitals, which is not probable, given the criteria of certification. Also, there were no NABH accredited hospitals out of about 4484 that were empanelled for more than two years, which is unlikely. Since the data is collected at the state level and then collated at the central database, these accuracy issues must be resolved at the unit level.

Making the field of NABH accreditation mandatory, along with the category of accreditation, a system to regularly update the accreditation status of the hospital, and the use of standard terms for a different type of accreditation is recommended to resolve these data inaccuracies. Since QCI is involved in both the NABH accreditation system and the QC process, the unique ID of hospitals can be linked to these quality programmes for appropriate identification and verification.

The vast amount of data (of about 25,817 hospitals with 12,301 private hospitals) has helped in overcoming this serious limitation to a large extent in identifying and comparing proportions.

3.8. Key points

1. Quality Certification initiative is aimed at helping the hospitals in improving their quality and to get a certificate as a mark of their quality. Through this, NHA and QCI aim to build a network of hospitals that provide quality, assured care to patients
2. Silver and Gold certificate is linked to the NABH accreditation level of the hospital, while Bronze certification has its process
3. Since the purpose of the QC scheme is to provide care of a standard level of quality to PMJAY beneficiaries across the country, the empanelled hospitals must adopt the scheme
4. Out of 2,822 NABH accredited hospitals (of different types), only 39.6% have empanelled with PMJAY so far, indicating a lack of interest in the majority
5. 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% of quality certified hospitals are in private empanelled hospitals
6. Overall 26.5% of NABH accredited hospitals have obtained Gold/Silver certificates so far, with noticeable difference state-wise
7. In the Bronze certificate category, the penetration has been mere 1.4% overall. State-wise variation is less than Gold and Silver certification
8. Hospitals that are currently not certified but registered for the process are extremely few. Within states, except for Telangana, all other states have less than 1% of their hospitals registered for QC

9. The data doesn't show any noticeable difference in hospital size for Gold and Silver levels. No statistically significant difference could be found
10. For Bronze certificate and registered hospital categories, the statistical analysis suggests that the proportion in Large hospitals could be significantly high compared to mid and small hospitals
11. 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. For hospitals that were empanelled more than two years back, no hospitals were found to have NABH accreditation or QC

4

Direct observation of certified hospitals

4.1. Quality assessment model

The quality of care in a hospital is affected by its structure and processes.[36] The level of infrastructure and resources of a hospital, along with the processes followed for providing clinical and non-clinical services, determines the quality of care. Most healthcare accreditation standards, including NABH, have specific standards to establish structure and processes in the hospital, which are necessary for achieving a desired level of quality. Under the QC system of PMJAY, hospitals are awarded Gold, Silver or Bronze certificate as a mark of the level of quality that they offer. The award of silver and gold certificates is linked to the NABH accreditation status of the hospital (Gold certificate for full accreditation and Silver certificate for entry-level accreditation). The bronze certificate is given to those hospitals with no NABH accreditation level but fulfils all the requirements specified for the Bronze level award. To obtain NABH accreditation, the hospital has to comply with NABH standards, which are designed to establish the desired level of structure, process and outcome. The requirements of the Bronze certificate are also designed on similar lines. Hence, a certified hospital must have some structure, process and outcomes in place, with the best levels expected in Gold certified hospitals, followed by Silver and Bronze certified. To examine the same, a physical visit of a sample of 21 PMJAY empanelled hospitals having a quality certificate was conducted.

During the visit, we observed some discrepancy in the actual QC status of hospitals, as informed by them, with what was available through secondary sources, and based on which sampling was done, 4 out of 6 hospitals that had entry-level accreditation had a bronze certificate instead of silver and three out eight full - accredited hospitals had Silver certificates instead of gold. This discrepancy could be due to the time-lapse between the up-gradation of the quality certificate from one level to the next, as some of these hospitals were upgrading their certificates. Since the QC programme specifies the linkage between NABH accreditation status and QC that the hospital is eligible for, we used the NABH accreditation status of the hospital (FA, ELA and NA) to compare structure-process-outcome and avoided the discrepancy to affect the data analysis.

The purpose of this study is not to examine or verify the effectiveness of the NABH accreditation system but to understand the comparison of the level of structure-process-outcome between non-accredited, ELA and FA hospitals. This will help in determining how effectively the NABH accreditation system can be used for differentiating hospitals on their level of quality.

4.2. Hospitals observed and observation method

The sample of 21 hospitals was selected for the physical visit (Annexure III). Sample mix of the location of the hospital, category of quality certificate and size of the hospital was ascertained. The states from which the hospitals were sampled were decided in consultation with NHA. From each state, hospitals were selected on a random basis after ensuring representation of quality certificate levels and hospital size in rural/urban locations. Table 5 describes the sample of hospitals observed.

Table 5: Sample mix of the hospitals undertaken for physical observation

	Number of hospitals
State and districts	
Uttar Pradesh (Lucknow and Kanpur)	7
Haryana (Faridabad and Rewari)	7
Gujarat (Ahmedabad and Mehasana)	7
Quality Certification level	
Bronze-certified hospitals	8
Silver-certified hospitals	7
Gold-certified hospitals	6
Size of the hospital	
Large (> 100 beds)	5
Medium (30 to 100 beds)	12
Small (< 30 beds)	4
Location	
Rural	7
Urban	14

A custom-designed checklist (Annexure-II) was used to record all hospitals' observations. The checklist consists of 16 observation points related to structure, 32 related to processes and 14 related to outcome parameters. For each observation point, a 5-point Likert scale was used, with one indicating very poor and five indicating excellent. To reduce the inter-rater bias, only one team, uniformly trained by the researcher, conducted all hospital visits and observation scoring. To ensure the authenticity of observed data, researchers also visited all 21 hospitals and cross-verified the data through sampling. Data collected from hospitals were verified, entered and cleaned. The average score was used to comment on the structure-process-outcome levels of different categories of hospitals.

The tool was developed to compare the structure-process-outcome levels of different types of hospitals under the study. It is not intended to measure the actual quality level of any hospital.

4.3. Overall observation

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 ELA and NA, respectively. Table 6 describes hospitals' score ranges and average scores under each accreditation category.

Table 6: 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)
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)

4.4. 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.

On observations related to structure, these hospitals were found to have good building infrastructure, sufficient equipment and human resources. Most treating doctors work full-time, with some visiting consultants in the panel. Most of the clinical and support services required per the specialities they offer were present in-house, while utility services such as housekeeping and security were outsourced. These hospitals had a reasonably well-defined management structure, with in-charges, supervisors, and patient care coordinators available in different departments.

The amenities like sufficient seating arrangements, lighting, ventilation and water availability were present. Emergency was separate and dedicated and had sufficient space for the ambulance to access the emergency entrance. Overcrowding was observed in two hospitals in OPD and the emergency area but was managed well by staff. Fire-fighting structures, signage and displays were in place. Most accredited hospitals were present with disabled-friendly structures like ramps, elevators, and disabled-friendly toilets. Hand hygiene structures like hand wash basins and hand rubs were available and easily accessible to the staff. Operation theatres were built as per infection control guidelines.

On the process front, these hospitals had most of the processes needed for quality management. All FA hospitals had dedicated resources allocated and organized for managing quality standards across the hospitals. In almost all FA 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, etc., were there. 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 staff behaviour towards patients was observed, it was found to be respectful.

While the level of structure did have 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 necessary for providing good quality and standardized patient care.

4.5. 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 components. While in FA, the overall score had a range of 0.6, in ELA, the range was 0.98. The divergence was found to be highest in the Process component, with the minimum to the maximum range being 2.3, compared to just 0.32 in FA hospitals. For the structure component, however, the range was narrower than FA.

These score ranges indicate that hospitals in the ELC category have comparable structural levels, but their process and outcome vary significantly.

On structural observation, we found that these ELC hospitals were small to mid-sized, with average infrastructure. Staff and equipment appeared to be limited considering the range of specialities they offer. Clinical support services such as laboratory, pharmacy, and imaging were typically outsourced. Other support and utility services such as food, laundry, housekeeping etc., were also outsourced. 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. In most ELA hospitals, there was no process of a formal agreement with visiting doctors. Basic amenities like seating arrangement, lighting, parking space etc., were mostly there. Basic safety infrastructure like fire safety and radiation safety was there.

The processes followed at ELA hospitals varied greatly across different hospitals. In some hospitals, only basic processes were followed, and processes related to quality assurance were largely absent. In other hospitals, several processes as given in NABH standards, such as that for medication safety, patient safety, patient rights etc., were observed to have been implemented either fully or partially. 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 organized.

4.6. Observations in non-accredited hospitals

The divergence in the level of structure-process-outcome was observed to be highest in this group of hospitals. Overall, not much difference was 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.

Some hospitals had the basic infrastructure, which appeared safe and convenient, while in some, the infrastructure was not up to mark. Very low inter-bed distance, absence of fire safety structures, lack of zoning in critical areas like OT, lack of disabled-friendly structures and inadequate hand washing structures were observed. The hospital staff appeared to have a basic understanding of patient care processes but were not aware of best practices, patient safety measures, infection control practices etc.

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

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

4.7. Inference from physical observation

The number of hospitals studied under each category constitutes an inadequate sample to generalize 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 improves from NA to ELC to FA hospitals. Variation in process and outcome is higher in hospitals with no or lower-level accreditation. These findings suggest that the accreditation process has been able to standardize the processes and systems in hospitals, with higher-level accreditation providing better results. Accreditation level appears to be a good indication of the 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.

4.8. Key points

1. The level of infrastructure and resources of a hospital, along with the processes followed for providing clinical and non-clinical services, determines the quality of care
2. Since the QC status of the hospital is linked to the NABH accreditation level, it is necessary to understand how well the hospitals under different accreditation categories (NA, ELC and FA) differ concerning their structure-process-outcome components
3. There was a visible difference between the hospitals belonging to NA, ELC and FA, all three components
4. FA hospitals had the best infrastructure, processes and outcomes, followed by ELA and NA, respectively
5. Variation within hospitals in the same accreditation category was highest in NA hospitals and least in FA hospitals
6. Findings indicate that the NABH accreditation level does classify hospitals based upon their structure-process-outcome level quality

5

Findings from analysis of claims

5.1. Claim process and data

Hospitals empanelled under AB PMJAY are reimbursed through a standard claim management process for the treatment they offer to AB PMJAY beneficiaries. Hospitals are required to get a preauthorization approval done at the time of admission of patients and submit the claim within two days of discharge of patients. Several data points are included in the claim process, including date of admission, date of discharge, treatment package, pre-authorization amount, pre-authorization date, claim amount submitted, claim submission date, claim amount paid, claim amount paid date and claim rejected date (if applicable). We used this data to assess and compare various measures that can directly or indirectly indicate the efficiency and effectiveness of hospital care as per their certification or accreditation type.

The data consists of a sample of patients who took treatment under AB-PMJAY at an empanelled private hospital. The sample consists of randomly selected claims of 2000 patients – 1000 from 30 different hospitals having quality certificates and 1000 from 30 different hospitals that do not have quality certificates. The samples were taken from multiple states and only within the latest one month. The secondary data was obtained from NHA after they communicated the sample criteria. The final sample size and the mix available after cleaning the received data are given below.

Table 7: Sample mix of the claims data

The sample size of claims	1978
Number of states represented	9
Number of hospitals represented	58
Claims from hospitals as per QC level	
Gold	19.2%
Silver	17.5%
Bronze	18.1%
Non-certified	45.1%
Claims from hospitals as per NABH accreditation/certification	
Full accredited or entry-level certified	46.0%
Not accredited	54.0%

Claims from the hospital as per size	
100 or more beds	28.2%
30-99 beds	39.2%
less than 30 beds	32.6%

The sample data was analysed for turn around time (TAT) for claim settlement, Length of stay, Claimed, paid and rejected amount, and frequent packages. Basic statistics are used for analysis.

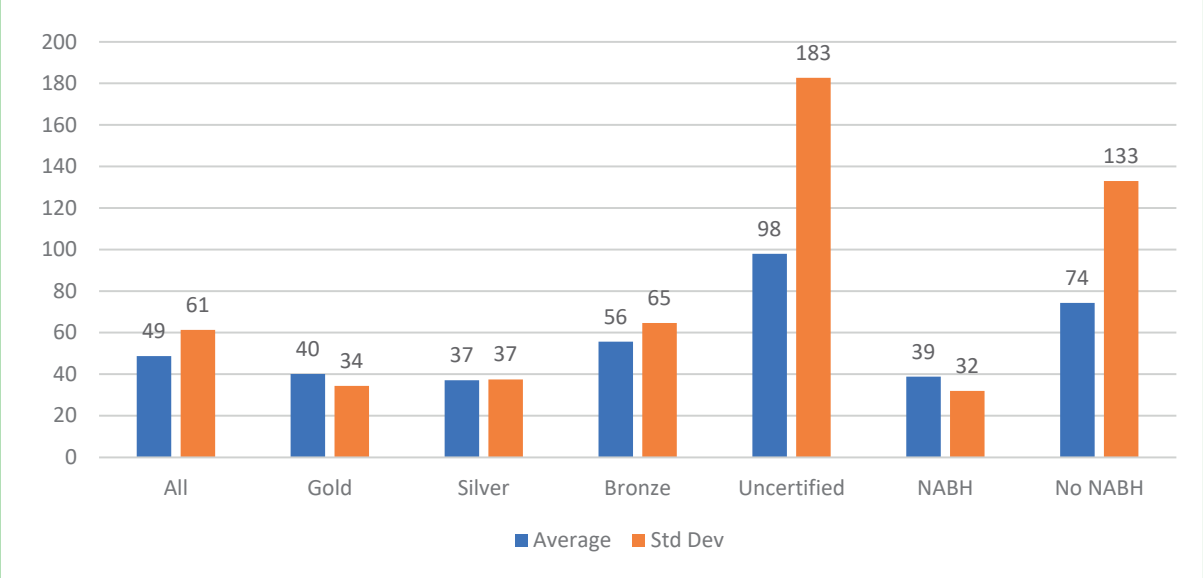
For all the parameters analysed, the comparison was made between Gold, Silver, Bronze and non-certified hospitals and also between NABH and non-NABH hospitals.

5.2. 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 related to the hospital submitting the claim and the agencies processing the claim. Factors related to the hospital include timely updating of all data on the portal, uploading of required documentary 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. 3)

Fig. 3: TAT of claim settlement (No. of Days)



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-sample 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.

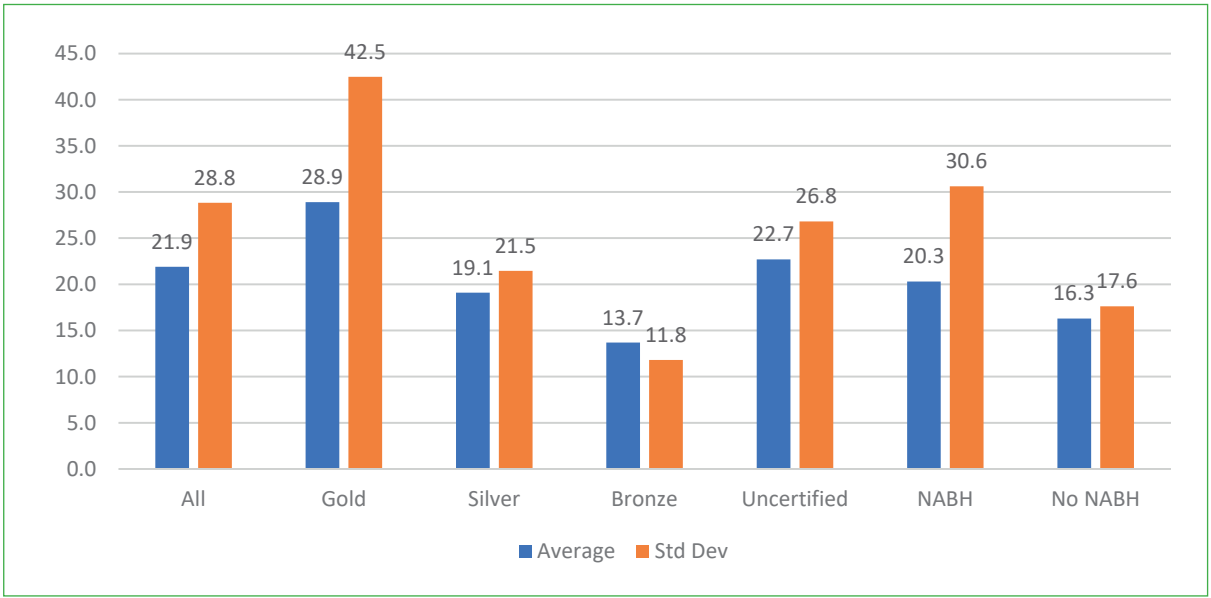
Assuming that the claim processing agencies address claims from all hospitals in a similar manner, the findings indicate that Gold/Silver certified hospitals, which are also FA/ELC hospitals, could be better in patient care documentation and effective updation of data on claim processing portal.

5.3. 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. 4.

Fig. 4: Claim value submitted (in Rs. '000)



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 $p < .005$. Interestingly, uncertified hospitals had a relatively high average claim value. It would be important to understand and delve deeper into whether such hospitals have the requisite infrastructure and facilities to provide higher-value claims that tend to be more specialized.

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.

5.4. Claim rejection by value

While the hospital submits the claim, 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 indicate 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.

Table 8: 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

Gold and silver-certified hospitals show a noticeably higher rejection percentage, while Bronze has a much lower rejection rate. Similarly, NABH hospitals have 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.

5.5. Frequently claimed packages

We explored if the frequently claimed packages differ across hospitals per their accreditation or QC status. This will help 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, a total of 315 unique treatment packages were claimed by the hospitals. Out of this, just 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 9 and Table 10.

Table 9: Proportion of the treatment package claimed in a hospital category out of all claims raised for that treatment package

Package/hospital category	No.	Gold	Silver	Bronze	Uncertified	NABH	Non-NABH
No.	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%

Table 10: Proportion of the treatment package out of all treatment packages claimed by the hospital category

Package/hospital category	n	Gold	Silver	Bronze	Uncertified	NABH	Non-NABH
n	1839	361	299	348	831	841	1839
Cataract	296	19.4%	10.7%	21.0%	14.6%	17.6%	14.8%
Haemodialysis	197	19.7%	10.7%	11.8%	6.4%	9.2%	12.0%
Coronary angiography	85	8.6%	8.7%	0.0%	3.4%	5.2%	4.1%
Hysterectomy	59	0.6%	1.3%	6.0%	3.9%	1.4%	4.7%
Laparoscopic cholecystectomy	54	1.4%	3.3%	2.3%	3.7%	1.5%	4.1%
PTCA (single or double stent)	52	5.5%	4.3%	0.0%	2.3%	4.4%	1.5%

Package/hospital category	n	Gold	Silver	Bronze	Uncertified	NABH	Non-NABH
PCNL	48	0.3%	2.0%	2.0%	4.1%	2.1%	3.0%
Total knee replacement	45	3.6%	4.0%	0.0%	2.4%	1.7%	3.1%
Acute gastroenteritis	36	0.0%	7.7%	0.3%	1.4%	1.2%	2.6%
Other	967	41.0%	47.2%	56.6%	57.9%	55.6%	50.0%

A Chi-square test of independence was performed for each of the top 9 treatment packages between NABH and non-NABH hospitals. The relationship of each treatment package with NABH or non-NABH hospitals and its statistical significance level is outlined in **Table 11.**

Table 11: Association of treatment packages with NABH and non-NABH hospitals

Treatment package	Observed association	Statistical values	Statistically significance (p < .05)
Cataract	NABH hospital	X2 (1, N = 1839) = 2.59, p < .107	Not significant
Haemodialysis	on accredited hospitals	X2 (1, N = 1839) = 3.93, p < .047	Significant
Coronary angiography	NABH hospital	X2 (1, N = 1839) = 1.30, p < .253	Not significant
Hysterectomy	Non accredited hospitals	X2 (1, N = 1839) = 15.84, p < .000	Significant
Laparoscopic cholecystectomy	Non accredited hospitals	X2 (1, N = 1839) = 10.51, p < .001	Significant
PTCA (single or double stent)	NABH hospital	X2 (1, N = 1839) = 13.94, p < .000	Significant
PCNL	Non accredited hospitals	X2 (1, N = 1839) = 1.34, p < .246	Not significant
Total knee replacement	Non accredited hospitals	X2 (1, N = 1839) = 3.973, p < .046	Significant
Acute gastroenteritis	Non accredited hospitals	X2 (1, N = 1839) = 4.769, p > .028	Significant

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 positively associated with non-NABH hospitals and one package with NABH hospitals. While this may indicate a preference of non-NABH hospitals by the majority of the patients for certain procedures, it may also be likely that there is supplier-induced demand for these packages potentially due to a favourable cost-differential vis-à-vis these procedures for such hospitals.

5.6. Key points

1. Gold and silver-certified hospitals have a lower TAT and deviation than the overall average. Similarly, NABH accredited hospitals also had a lower TAT. The difference in TAT between Gold/ Silver certified hospitals and non-certified hospitals was statistically significant
2. Assuming that the claim processing agencies address claims from all hospitals similarly, the findings indicate that Gold/Silver certified hospitals, which are also NABH accredited hospitals, could be better in patient care documentation and effective updation of data on the claim processing portal
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 accredited hospitals also had submitted higher value claims. The differences were found to be statistically significant
4. Gold/Silver certified hospitals and NABH accredited hospitals seem to be comparatively better equipped to provide an advanced level of care than Bronze and non-NABH hospitals
5. Gold and silver-certified hospitals show a noticeably higher rejection percentage, while Bronze has a much lower rejection rate. Similarly, NABH hospitals have a higher rejection

percentage. Most of these rejections could be because of higher than permissible claims raised by these hospitals. However, this needs to be investigated in greater detail to rule out the possibility that the rejections are part of process-related issues among these hospitals vis-à-vis claims documentation

6. From all claims in the sample, the hospitals claimed a total of 315 unique treatment packages. Out of this, just nine packages (3.2%) accounted for about 50% of all the claims
7. 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 positively associated with non-NABH hospitals and one package with NABH hospitals. While this may indicate a preference for non-NABH hospitals by most patients, it is unlikely that patients have adequate information to determine which hospital is better at treating a procedure. Another possible explanation is that favourable cost-differential for certain procedures in uncertified hospitals drives utilization through supplier-induced demand

6

Hospital's perception and feedback for mainstreaming quality

6.1. Empanelled hospital's role in the quality of care under AB PMJAY

Empanelled hospitals are key stakeholders in the AB PMJAY scheme. They are at the unit level, where healthcare is provided to the beneficiary population. The entire QC system is targeted to improve the quality of care at these hospitals. At the core of any quality improvement programme are the interest, intent and voluntary participation of the organizations at which quality improvement efforts are targeted. Understanding the perception of the participating organization towards the QC programme and their feedback on what can be done to teach interest amongst hospitals is essential for effective designing and implementing quality improvement initiatives.

To map the perception of empanelled hospitals and record their feedback, 42 hospitals were approached for semi-structured qualitative interviews. After taking out the non-response, interviews of 29 hospitals were recorded. Table 12 states the description of hospitals interviewed.

Table 12: Final sample mix of the hospitals interviewed

	Number of hospitals
State and districts	
Uttar Pradesh (Lucknow and Kanpur)	8
Haryana (Faridabad and Rewari)	11
Gujarat (Ahmedabad and Mehasana)	10
Quality certification level	
No certificate	8
Bronze-certified hospitals	8
Silver-certified hospitals	7
Gold-certified hospitals	6
Size of the hospital	
Large (> 100 beds)	6
Medium (30 to 100 beds)	16
Small (< 30 beds)	7
Location	

	Number of hospitals
Rural	11
Urban	18
NABH accreditation level	
Not accredited	8
Entry-level certificate	13
Full accredited	8

A semi-structured questionnaire was prepared to conduct the interviews aimed at mapping the perception of the hospital about quality improvement efforts taken under AB PMJAY and to obtain their feedback on how to attract the interest of empanelled hospitals for their voluntary participation in the quality improvement drive. The sample mix consists of both types of hospitals, those that have participated and those that have not participated in the QC system. The interview was conducted face to face with 21 hospitals that had acquired QC, while with the remaining eight hospitals, the interview was conducted telephonically. The interview consisted of questions to understand why they have acquired or not acquired QC for their hospital and how has QC affected the quality of their hospitals. Their plan about continuing with QC was also asked, along with feedback on what could be done to increase the acceptability of quality improvement activities amongst empanelled hospitals.

Findings

Findings are stated subjectively, first for the hospital's perception of NABH accreditation, followed by the perception of the QC programme of AB PMJAY. Lastly, their opinion about the AB PMJAY programme and their feedback about what could be done to improve quality are articulated. In all parts, the findings are grouped as per the accreditation or QC category of the hospitals.

6.2. 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 their future course of action will be regarding 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, standardization of processes, staff awareness about good practices, and patient safety practices were a few commonly reported benefits of NABH accreditation.

> *"After NABH, hospital's processes have improved, and the staff knows what to do now…",*
>
> *"What NABH does is that it made us maintain all records well. So now, if I need any data, it is easy to get" and*
>
> *"Definitely, yes. All these systems of code blue and patient safety got implemented because of NABH preparation work",*

These are examples of some of the responses received from different hospitals.

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. Some of the responses received from NA hospitals were

> *"NABH will improve your documentation. I have seen in another NABH hospital how they work. They were good."*

"When NABH is made for quality, then it should improve quality. Otherwise, what's the point."

"It is just for publicity. NABH or JCI does not change anything. Most important is money. If the hospital has good money backing, then they can give good quality."

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 considered reliable hospitals for patient care. About half of the hospitals shared that even in the patient community, there is some 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.

"Yes, because we have NABH, other hospitals in the city give more importance to us in any association-related discussion. The industry knows how difficult it is to get NABH. Not everyone can get it easily. There is value", as stated by one FA hospital

In addition to the positive image, NABH accreditation also improves the hospitals' chance of getting empanelled with various health insurance companies and other government health schemes, like CGHS.

As one of the hospitals said, "If we have NABH, then it is very easy to get empanelled by an insurance company".

"They ask for NABH. If you have it, you get it (empanelment). Else you just keep doing follow up" – another hospital, stressing how useful NABH accreditation is

Amongst other benefits, some hospitals acknowledged that NABH accreditation enables them to receive incentives on the AB PMJAY package, which is unavailable to non-NABH accredited hospitals. However, this benefit was largely started by ELA hospitals and not so much by FA hospitals.

Future plans – When asked how likely they are to continue with NABH accreditation in future, without exception, all FA hospitals shared that they will continue with the NABH accreditation system. "Of course. We will maintain our accreditation" "100%, there is no doubt about it. Management is clear that NABH is the way for the future" – were the kind of responses received by hospitals.

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 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 and expressions.

As one hospital shared, "Abhi toh entry-level karne mein hi itna time lag gaya, dekhte hain full accreditation ke liye kya hoga" - (Just for entry-level accreditation, it has taken so much time, let's see what happens for full accreditation).

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.

"For our level of hospital, Entry level tak hi theek hai, full accreditation ke liye bahut changes and kharche karne padega. Agar Government support karegi, to phir soch sakte hain" (For our level of hospital, Entry-level accreditation is enough of a task, Full accreditation will require too many changes and high expenses. If government support us financially then we can think).

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.

6.3. 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 realized 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 adding one more certificate to the hospital's name, 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.

Some responses quoted by a couple of hospitals include

> *"The certificate has not changed anything. Whatever improvement happened was because of NABH. We got a certificate because we were NABH."*

> *"Nahin, QC se benefit to kucch nahi hai. Premium incentive to NABH ke wajah se milta hai. Who to QC nahi hai to bhi milega. Haan sirf yeh hai, ki future mein government kucch benefit de, to fayda ho sakta hai" - (No, there is no benefit from QC. Premium incentive is because of NABH. That is given irrespective of QC. In future, if the government gives some advantage, then we can benefit).*

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 the patient community. Hence, having or not having QC does not make much difference from an image point of view.

> *"Nobody knows about QC. Patients don't even bother about which certificate the hospital has. All they want is good treatment. However, we have still displayed our Gold certificate near the reception area."*

> *"QC se thoda bahut ho sakta hai, but abhi zyada kisi ko maalum nahi hai" (May be there is some image benefit due to QC, but as now, not many people knows about QC).*

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 the government informed it, they thought it could be mandatory, so they applied. They also added that since the process of application was completely online and simple, they just applied for the certificate.

> *"DIU se email aya tha. Aur ek link bhi tha. Sara process online hi karna tha" - (Someone from DIU emailed us about the certificate. They shared a link. Entire process was online)."*

> *"They informed us in a workshop, and we thought that if we are already accredited, why not get certified also. It was easy, so we got it for us."*

"We applied for the certificate, but they took four months and then rejected. We again applied. The district coordinator was following up with us."

One hospital also added that they believe that future government may incentivise QC hospitals in some other manner, so it is sensible on their part to get QC. "Jab Government kah rahi hai, to humne socha ki aage ja ke kucch benefit ho sakta hai." - (When Government is telling us about certification, so we think, in future, it can give benefit).

Future plans - Almost all hospitals said that they had not given much thought to what they would do in the future, but 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 stated that if there are some benefits attached to getting the certificate, hospitals will be interested in continuing.

6.4. 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 plans.

Package rates - In general, there was dissatisfaction with the package rates as most hospitals think 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.

"Rates are lower than even CGHS rates; how can they expect to provide quality treatment?"

"Packages and rates need to be revised. Just 4000 Rs per day is given for a patient who is not enough to accommodate test, ICU, ward and room charges which are not beneficial for the hospital."

"Rates for paediatric and neonatal treatment are very low. Sometimes it is difficult to meet even the cost, and we have to spend from our own pocket."

"Ab dekhiye, is rate par, I have to call visiting doctor. Woh kyu maanega. Use to apne fee se matlab hai. Phir bhi hum kisi tarah se mana lete hain, kyuki hamare relations acche hain" – (Now you see, in this rate I have to call visiting doctor. Why will he agree? He is only concerned about his fee. Even then we somehow convince them, because we share good relation).

While smaller and low-resourced hospitals did share the concern of low package rates, they were not very concerned. Many of these hospitals agreed that they could manage the patients within the provided rates.

"Phir bhi manage ho jaata hai. Ab rate itna hi hai, to usi mein adjust kar lete hain. Aage bhi karenge. Akhir public ki suvidha ke liye yeh scheme hai" - (Still we manage. If this much only is the rates, then we adjust within that. In future also we will manage. Ultimately it is for the benefit of public).

Claim management - Smaller hospitals expressed their dissatisfaction with the claim management process. 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.

"Timely payment to be done should be more systematic, the hospital has to pay from their own payment, and they receive payment after six months. Prior to corona, at least 25 patients were treated and out of only 3 or 4 patients, payment was received."

"The problem aggravated after the TPA was changed to XXXX. Earlier it was not that bad. But now, for every claim, there are just queries."

Several hospitals also feel that the TPA does not have the requisite clinical expertise to comment upon treatment, and most of their queries are unnecessary and wrong. Some hospitals also feel that TPA does this on purpose so that they get some time to close the payment.

"Yeh file dekhiye. Inhone query lagayi thi ki doctor ne OT notes nahi likhe. Aap dekhiye, yeh OT notes hain ya nahi. Phir kahte hain ki poora detail nahi diya hai. Ab mera doctor bahar se hai, use main thode hi bolunga ki aap baith ke poora notes likhiye. Kabhi to mian khud hi records likhne baith jaata hu" - (Look at this file. They said that OT notes are not written by the doctor. You see, isn't it there. Then they say that full details are not mentioned. Now, my doctor comes from outside. Should I tell him to sit and complete OT notes? Sometimes I myself sit to write records).

"They do it intentionally. When they get a lot of claims and they have to close them, they just raise any query. Sometimes they call us and say they do not respond to query now, and we have a lot of pending work."

Problems related to claim management were not reported so much by FA hospitals. They did not face much of issues related to delay, queries or rejection.

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

Amongst FA hospitals, the response was mixed. Some hospitals categorically said they would like to discontinue AB PMJAY as the package rates were very low.

"Ours is a new hospital, and we have heavily invested in it. It is important that we generate good revenue to break even. We can't afford to treat patients in less price. So we have applied for cancelling our empanelment."

"We are not in it for profit. That we earn from other patients, but we want to be with the government in this social cause. So we will continue."

Others who expressed that they will continue reasoned it for social cause and not really for business reasons. Almost all FA hospitals expressed low package rates and did not provide economic incentives. Notably, 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.

6.5. 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, ELA 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 unaware of the same. Only two out of eight hospitals contacted said they could consider going for QC.

"Was not aware, NABH is enough for 50 bedded hospital."

"We did not realise, will see. Probably we will apply now."

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.

6.6. 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 face, and resolving these problems is essential before attempting any quality improvement efforts. After grouping, the common feedback from hospitals is described below.

1. **Price** - Overwhelming feedback from all kinds of hospitals was on how important it is to improve package rates. The hospitals believed that good quality care should not be expected at a low price. For hospitals to provide high-quality care, rates should be set accordingly. Some hospitals also suggested that clubbing packages should be easily allowed without reducing the second or third package price.
2. **Differential pricing** - Suggestions about differential pricing, as per the hospital level, largely came from large, well-resourced hospitals with 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 the government pays good rates to quality hospitals, then naturally, every empanelled hospital will try to get into that bracket. One hospital stated the point: “Do you pay the same rate to a 5-star hotel and a 2-star hotel? No. Then why do you pay the same rate to a full-fledged corporate hospital and a small, poorly resourced hospital”.
3. **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.
4. **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. The government should drive to educate the beneficiaries about good quality hospitals. As per the recommendation, creating extensive awareness amongst beneficiaries about what it means to have by 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.
5. **Other** - Few other feedback that was received include increased monitoring by SHA and DIU, Financial support to hospitals who may need to invest in their infrastructure for providing better quality care, trusting the hospital rather than doubting them in the claim process and providing reward and recognition to hospitals that provide good quality care.

6.7. Key points

1. Accredited hospitals feel that NABH accreditation positively impacts the quality of care. Improvement in documentation and record-keeping, standardization of processes, awareness of staff about good practices and establishment of patient safety practices were a few commonly reported benefits of NABH accreditation
2. About half of the NA hospitals believe that NABH accreditation should improve the quality. The rest of the hospitals were indifferent. Several NA hospitals have started preparing or are in the process of getting accreditation
3. Other than quality improvement, all hospitals stated that the NABH accreditation helps in positive image building within the hospital industry. Incentive in package rates by AB PMJAY was also cited as a benefit of NABH by a few hospitals
4. All FA hospitals shared that they will definitely continue with the NABH accreditation system and will upgrade as and when accreditation standards are revised

5. Amongst ELC hospitals, several hospitals are planning to upgrade themselves to the FA category. However, many also stated that getting full accreditation may take time and effort and were uncertain about getting FA. Few hospitals were content with ELC and do not intend to go for FA at present
6. Silver and Gold certified hospitals do not feel any tangible or intangible benefits of QC, other than just having one more certificate and the hope that in future, it may get them some benefit
7. The benefit of QC in terms of brand image enhancement was also not reported by any hospital
8. The bronze-certified hospital had some positive feelings about the certificate and reported that they are encouraged to try for ELC
9. No hospital reported any inherent reason 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
10. Almost all hospitals said that they had not given much thought to what would they do in future, but as of now, they don't see any problem in continuing with QC
11. Opinions related to AB PMJAY – Most hospitals were dissatisfied with the package rates offered; however, several smaller hospitals reported that they can manage within the given rates
12. Dissatisfaction with the claim management process was reported largely by smaller hospitals. Common problems faced by the hospitals include Delay in payout, reduction of the claim amount, claim rejection, too many queries and a lot of documentation work
13. Smaller hospitals intend to continue with AB PMJAY in future. Few large FA hospitals intend to discontinue AB PMJAY, primarily due to low package rates
14. Hospitals that do not acquire QC were either not aware or did not feel the need to acquire QC
15. Feedback received from hospitals for quality improvement include revision of package price, differential pricing, streamlining of claim processes and creating awareness amongst beneficiary about Quality Certificates

7

Patients satisfaction and feedback

7.1. Patient satisfaction and quality of care

Customer satisfaction is one of the most popular definitions of quality.(37,38) It is the perception of customers about how good or bad a product or service is, based upon his/her experience. Measurement of the customer satisfaction level is generally equated to the level of quality of a product or service offered by an organization. Customers in the context of hospitals are their patients (including family). With the rising emphasis on patients as customers of the hospital, in addition to quality, patient satisfaction is also considered a key outcome of healthcare.[39] It is a major determinant of the extent of viability and sustainability of any system designed to provide medical care. Patient satisfaction has been found to be a significant determinant of the healthcare provider the patient chooses[40], adherence to medical recommendations[41] and non-utilization of health plans.[39]

Understanding and measuring the patient satisfaction level is pertinent to assessing a hospital's quality of care. In addition, specific feedback from patients helps in understanding the reasons behind the stated satisfaction level. These can then be converted into actionable points to reduce dissatisfaction and enhance satisfaction.

To understand the quality of AB PMJAY empanelled hospitals from the lens of patients, we conducted a patient satisfaction and feedback survey. The objective of the survey was to assess the overall satisfaction level with different aspects of healthcare services and compare it across different categories of hospitals, classified as per their quality.

Method

A structured patient satisfaction survey was conducted on patients of the twenty-one quality-certified hospitals selected for this study. The sample includes 300 patients who are AB PMJAY beneficiaries and have taken treatment in any of these 21 hospitals within the last three months. Currently admitted patients were excluded to avoid the possibility of biased responses due to concern over adverse consequences on their healthcare. Due to the confidentiality of personal data, details of patients could not be obtained from the central database at NHA. Hence, the study hospitals were requested to voluntarily share the details of patients who have taken treatment at their hospital in the last three months. The details include the patient's name, phone number, age, gender, date of admission and discharge.

Telephonic contact with all 300 patients was attempted by a trained research assistant of the project. About 100 patients could not be contacted due to either incorrect telephone numbers or phone numbers being

switched off. Thus, the total sample size for this part of the study was 200. An established instrument, Patient Satisfaction Questionnaire-18 (PSQ-18) – Annexure-VII - was used to conduct the survey. (30) This tool consists of 18 closed-type questions. It is typically used to evaluate patients' satisfaction with medical services in six main domains: General Satisfaction, Technical Quality, Interpersonal Manner, Communication, Financial Aspects, Time Spent with the Doctor, and Accessibility and Convenience. We added one more question on overall rating: a 10-point rating scale was provided.

In the end, each patient was asked to provide a descriptive remark about their experience with the hospital to capture their specific complaints, if any. The remarks were qualitatively analysed to identify those that reflect complaints. These were grouped as per their type, and frequency count was done in combination with the accreditation category of their hospital.

Verbal consent was obtained before the interview initiation, and each interview was recorded with their permission. The research team randomly verified the data from the phone recordings and ensured the authenticity of the data collected. The average time required to complete one telephonic interview was 10-12 minutes. Data analysis was done as per the scoring instructions of PSQ-18. Integrated scores were calculated for all hospitals and FA, ELC and NA hospitals. Comparisons were made using descriptive statistics.

Findings

The sample reflects a reasonable mix of the participating respondents across gender, age group, region, hospital size and accreditation category. (Table 13)

Table 13: Sample description of patients surveyed for satisfaction

Sample size (n)	200
Gender	
Male	61%
Females	39%
Age group	
Below 25 years	10%
26-40 years	21%
41-60 years	45%
Above 60 years	24%
Region	
Gujarat	33%
Haryana	24%
Uttar Pradesh	43%
Hospital size	
100 or more	22%
31 – 99	67%
30 or less	12%
Hospital accreditation (NABH)	
Full accredited	37%
Entry level certified	32%
Not accredited	31%

7.2. Patient satisfaction scores

The satisfaction score was calculated for six aspects of patient satisfaction as per the PSQ-18 methodology. In addition, an overall rating of the hospital was taken from the patient. The scores and rating for hospitals as per their accreditation category is given in Table 14.

Table 14: 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. It is pertinent to note here that FA hospitals have the highest accreditation level, as per NABH, and are recognized as hospitals with best practices. ELC hospitals are considered hospitals on the path to full accreditation. The findings thus indicate an inverse relation between clinical and service quality aspects if one equates accreditation levels with patient satisfaction levels. The differences, however, are not statistically significant. It is also worth noting that the difference between FA and ELC is noticeably greater than 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 looked into. No meaningful correlation was found (Table 15).

Table 15: Average overall hospital rating

All Hospitals	8.6 (2.4)
Gender	
Male	8.7 (2.2)
Females	8.4 (2.7)
Age group	
Below 25 years	8.1 (2.7)
26-40 years	8.6 (2.4)
41-60 years	9.0 (1.9)
Above 60 years	8.3 (2.9)
Correlation coefficient with age	-0.007
Region	
Gujarat	8.9 (2.3)
Haryana	8 (2.9)
Uttar Pradesh	8.8 (2.1)
Hospital Size (Beds)	
100 or more	8.4 (2.3)
31 – 99	8.7 (2.4)
30 or less	8.9 (2.5)
Hospital accreditation (NABH)	
Full accredited	7.9 (2.8)
Entry level certified	8.9 (2.2)
Not accredited	9.2 (1.2)

7.3. 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 16**).

Table 16: 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, which is central to the ultimate goal of universal health coverage. Dilution of financial protection, if 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 17 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.

Table 17: 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%
Complaint type				
Financial	47%	54%	44%	42%
Clinical outcome	10.5%	18%	9%	3%
Empathy	9.5%	12%	9%	6%

Like patient satisfaction score and overall rating, frequency of complaint too depict 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 the difference between ELC and NA hospitals, which is similar to how patient satisfaction scores differ between these categories.

7.4. 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.

7.5. Key point

1. The patient satisfaction scores, overall hospital rating and proportion of patients complaining all indicate a similar phenomenon.

2. Contrary to general expectation, NA hospitals seem to have been providing patients with a better experience than ELCs. In contrast, FA hospitals have been perceived as the least satisfactory among the three categories.
3. The difference between the satisfaction levels of FA and ELC is notably greater than the difference between satisfaction levels of ELC and NA.
4. Have to or have been asked to pay out of pocket was the most frequently reported complaint by the patients, followed by the poor clinical outcome and lack of empathy.

8

Assessment of quality certification system

8.1. Effectiveness of a quality certification/accreditation system

The quality certification programme under the AB-PMJAY scheme, a joint initiative by NHA and QCI, aims to encourage empanelled hospitals to improve their quality. It consists of three progressive levels of recognition given to hospitals, in the form of a Bronze certificate at the first level, followed by silver and gold. The silver and gold certificate is linked to the hospital's NABH ELA and FA status, respectively. The bronze certificate is given to hospitals that are not accredited but follow some basic structure-process and outcome standards outlined under the programme. The programme is managed by QCI, which also operates the NABH accreditation programme in the country.

For the QC programme to create any significant impact on the quality of care provided at empanelled hospitals, it should serve the following three requirements

1. **Relation between certification level and quality** - The level of certificate correctly matches the level of quality of the hospitals
2. **The interest of hospital** - Empanelled hospitals voluntarily participate in the QC programme to achieve and progress through the levels of quality
3. **Future interest of hospitals** - Hospitals that achieve higher level certificates are interested in continuing treating the AB PMJAY beneficiaries

The following sections assess the QC programme on how well it serves the above requirements

8.2. Relation between certification level and quality

For the QC programme to drive the quality amongst empanelled hospitals, the effectiveness of quality certificates is identifying good quality hospitals, which is a critical factor. Quality is subjective; an appropriate and valid assessment of a hospital's quality is key for recognizing and rewarding a hospital. Although several models and methods exist for measuring and assessing healthcare quality, it is regarded as complex and subjective. Some common methods for assessing quality include the SERVQUAL model, the HEALTHQUAL model, Donabedian's structure-process-outcome model and IHI's six-dimension model. However, all these models have specific constraints that limit their use for commenting on the overall quality of a healthcare organization. One of the widely used methods in most countries worldwide is the healthcare accreditation system, under which a hospital is certified as a good quality hospital by an independent agency. There are different healthcare accreditation systems worldwide, but most of them follow a similar approach to assessing and certifying quality. They identify

hospitals worthy of receiving accreditation certificates on the basis of the level of compliance that hospitals demonstrate to a set of pre-defined standards, which has been established by the accrediting body. The level of compliance is assessed through an independent assessment of the hospital facility by trained and certified personnel using a standardized assessment method.

The QC programme of AB PMJAY appears to be similar to an accreditation programme, with some key differences. While the silver and gold certificate of the QC programme, like most accreditation programmes, identifies and certifies hospitals based upon their level of quality, the method of identification differs. Unlike the accreditation programme, the silver and gold certificate does not have its own set of standards that a hospital needs to follow, nor does it conducts an independent assessment of the hospital. It identifies a good-quality hospital from the NABH accreditation status of the hospital. ELA hospitals are recognized with a Silver certificate, and FA hospitals are recognized with a Gold certificate.

With the above method, the credibility of the Silver and Gold certificate of the QC programme is inter-linked with the credibility of the NABH accreditation system in rightly identifying good quality hospitals. NABH accreditation programme is the flagship accreditation system in the country and has been well received by the hospital industry, given its rapid penetration country-wide. ISQua accredits the NABH accreditation standards, and many other health insurance schemes prefer adding NABH-accredited hospitals to their panel. Only hospitals with at least ELA are allowed by IRDA to offer cashless treatment to insured patients. These achievements signal the credibility of the NABH accreditation system in effectively identifying quality hospitals in the country.

The QC programme has pre-determined standards for a bronze level certificate, in which hospitals with no NABH accreditation are eligible. Also, it conducts an assessment of the hospitals on these standards. This seems similar to an accreditation programme; however, the level at which the Bronze certificate is targeted cannot be equated with the level of FA. This is because the purpose of the Bronze certificate is primarily to encourage hospitals with no accreditation to embark upon the journey of quality and progress to higher levels. Due to this, the requirements for getting a bronze certificate must be low enough for most hospitals to achieve it, even if the level of quality is not what one can expect from a hospital accredited or certified for quality.

The following deductions can be made with the mechanism of identifying and certifying hospitals described above.

1. Silver and Gold level certificates' ability to identify hospitals with the appropriate level of quality is dependent upon the robustness of the NABH accreditation system. While, at present, the NABH accreditation system appears to be robust enough, in future, any dilution of its effectiveness in assessing or identifying a hospital's quality will also dilute the ability of Silver and Gold certificates to determine a hospital's quality.
2. The bronze certificate has its system of assessment and recognition by the hospital. So, validation of standards and reliability of the assessment method used for the Bronze certificate will be integral to establishing the link between the Bronze certificate and quality
3. While the Bronze certificate is not dependent on any other accreditation system, it primarily aims at initiating the hospital on a quality improvement journey. Hence, on its own, the Bronze certificate may not be sufficient in mainstreaming the level of quality that is desired in empanelled hospitals, and progressive levels of quality will be required

8.3. Interest of hospitals

Voluntary participation of hospitals is crucial for healthcare quality improvement, and any effort to make certification mandatory has serious potential to defeat the purpose. Voluntary participation of hospitals depends upon how much value they see in the certificate with respect to the cost involved in achieving it. The benefits of a quality certificate, tangible or intangible, should be perceived by participating hospitals as worthy enough to generate sufficient interest. Whether or not hospitals voluntarily opt for certification depends upon a perceived cost-benefit analysis. To understand how the interest of the hospital is impacted by the QC programme of AB PMJAY, we will assess the perceived benefits and costs of getting certified from the lens of hospitals.

Hospital benefits - Benefits to the hospital can be tangible and intangible. Tangible benefits could include monetary benefit, priority for additional business opportunities, and ease of claim processing, while intangible benefits can include positive brand image development. Benefits assessment is presented below as monetary, branding, and other benefits.

1. **Monetary benefits** - A tangible benefit that any hospital could see is the direct financial benefit due to their certification status. The ELC and FA hospitals receive 10% and 15% premium over the base package price. There are no additional incentives for ELC and FA hospitals to obtain silver and gold certificates, for which they are readily eligible, respectively. Hence, there is no direct monetary incentive for Silver and Gold certificates that the hospital could consider.

   Bronze-certified hospitals receive a 5% premium on the base package price as an incentive.

2. **Branding benefit** - Another significant benefit of such schemes is their ability to significantly boost the brand image of the healthcare organization. However, for any quality recognition scheme to be able to do that, its own credibility has to be well established. The AB PMJAY's new QC programme, which is generally limited to AB PMJAY empanelled hospitals, is not likely to have achieved such credibility in the market. Moreover, the dependence of Silver and Gold certificates on the NABH accreditation system prevents these certificates from developing their own identity.

   However, within the AB PMJAY system, the Bronze level may have some marginal image value. Since these bronze-certified hospitals belong to non-accredited hospitals, they can have some image-edge compared to non-accredited and non-certified hospitals. While Silver and Gold certification is available only for AB PMJAY empanelled hospitals, Bronze certification is also offered to non-empanelled hospitals. Bronze certification can also be an initiating step for many low-resource hospitals, which may find higher-level accreditation difficult.

   Further, since AB PMJAY caters to a deprived population with a large portion of illiterate and less educated people, it is very unlikely that the relevant patient community will form an opinion about a hospital based on what QC they hold.

3. **Other benefits** - Some other benefits that could be thought of for QC hospitals include ease of claim processing, preference in other empanelment and other business opportunities. However, no such benefits currently exist in the QC programme, nor were observed in practice. Some hospitals may see future benefits that Government may give to QC hospitals, though this could only be speculative.

Except for a 5% premium on the package price for the bronze certificate and future expectation of benefit, the design of the QC programme does not indicate any noteworthy benefit percevied by empanelled hospitals for getting QC.

Cost of getting certified - For hospitals to generate interest, perceived benefits should justify the cost of getting certified. The high perceived cost of certification can reduce the interest of hospitals in getting certified. Cost can be direct, in the form of certification fee and indirect, in the form of preparation and up-gradation required to get certified.

From the description of the QC programme, there is no fee charged for Silver and Gold certification. However, the hospital needs to be ELC or FA, for which NABH charges a fee. (42) The fee for EL certification is Rs. 52,000/- for HCO and Rs. 21,000/- for SHCO (excluding GST). Fees for full accreditation range from Rs. 1,10,000/- per annum to Rs. 4,40,000/- per annum depending upon the size and category of the hospital.

For hospitals that are already accredited by NABH (EL or FA), the indirect cost for Silver and Gold certificates is almost nil. However, for hospitals that do not have accreditation or for the hospital that has ELC and want to progress to the Gold certificate, a substantial cost can be incurred, depending upon their situation. While no published reference is available on the average cost of preparing for NABH accreditation, the response from the study hospitals suggests that for most hospitals, the cost is perceived to be substantial. Also, the cost of preparing for FA is considerably higher than preparing for ELC. (Table 18)

Table 18: Key difference between NABH Entry-level accreditation and full accreditation

	Full accreditation	Entry-level certification	Bronze certification
Number of standards and objective elements applicable	100 Standards and 651 objective elements	45 standards and 167 objective elements	53 standards and 182 Means of verification
Requirements classification	Objective elements are classified in the 'Commitment', 'Achievement' and 'Excellence' category, each further categorised into core and non-core objective elements.	No classification	No classification
Additional Infrastructural requirements	Specific and detailed infrastructure guidelines for operation theatre are applicable	No additional infrastructure requirements other than those mentioned in the standards	No additional infrastructure requirements other than those mentioned in the standards
Number of assessments	Self-assessment, Pre-assessment (optional), Final assessment and Surveillance assessments (after accreditation)	Only Final assessment	Desk assessment and On-site assessment
Minimum scoring criteria	80% overall, with 80% in each standard and chapter	Minimum 50% in all standards and 50% in all chapters	No specific score. The hospital needs to rectify the non-compliances raised
Validity	Four years (with re-accreditation after that)	Two years with the expectation to progress to FA level or to renew the EL certificate	Two years with the option to progress to the next level or to renew
Fee	Application fees range from Rs. 25,000/- to 1,50,000/- and Annual fees range from Rs. 1,10,000/- to Rs. 4,40,000/- depending upon hospital size and its SHCO or HCO status	Rs. 21,000/- for SHCO and Rs. 52,000/- for HCO	Nominal for Empanelled hospitals Rs. 2500/- for non-empanelled hospitals

The difference described in Table 18 indicates that the cost of preparing for full accreditation could be substantially higher than ELC. Most of these cost differences can be due to meeting infrastructure requirements of OT and increased human resource requirements to meet the FA standards and objective elements. Due to cost differences, many hospitals that can achieve ELC may not be able or interested in FA.

For the Bronze certificate, a nominal fee is charged to AB PMJAY empanelled hospitals and Rs. 2500/- (excluding taxes) to non-empanelled hospitals. Cost towards preparation for the Bronze certificate can vary from hospital to hospital, depending upon the gap between their existing condition and what would be needed to get Bronze certified. To measure the average indirect cost in getting certified, a detailed costing study needs to be done, which was out of the scope of this study. However, based on the review of certificate requirements, the indirect cost for meeting the Bronze certificate requirement should be similar to that of ELC.

The above assessment of the cost of certification can be summarised as

1. The cost of obtaining the Silver certificate for ELC hospitals and Gold certificate for FA hospitals is close to nil. So cost may not be a barrier for ELC and FA hospitals
2. The cost of obtaining the Bronze certificate is largely indirect and depends upon the existing condition of the hospital. The cost for hospitals with poor infrastructure and resources can be significantly higher than for hospitals with reasonably good infrastructure and resources. Thus better a non-accredited hospital is, the lower the cost barrier will be
3. The indirect cost of progressing from Bronze to Silver does not appear to be significantly high. However, the direct cost, in terms of accreditation fee for ELC, can be a deterrent to some hospitals

4. Both Direct and Indirect costs of progressing from Silver to Gold certificates can be significantly high due to major differences in the requirements of ELC and FA

From the above assessment, the inherent benefit of the Silver and Gold certificate seems to be very limited and seems to be present only in the form of future expectations or in getting some face value in front of Government authorities. Even though the inherent benefits are lacking, since the cost of getting certified for ELC and FA hospitals is close to nil, there is a good possibility of such hospitals still getting certified with appropriate awareness and publicity. However, for hospitals that are not already accredited, it is unlikely that they will go for ELC or FA by NABH, primarily for Silver or Gold certificate, especially if the hospital perceives the indirect cost of getting accredited as high.

While Silver or Gold certification may not drive the hospitals to achieve ELC or FA, there could be other drivers. NABH ELC or FA has tangible and intangible benefits, which are missing in the Silver and Gold certificate. Positive brand image, recognition by several insurance companies for empanelment, permission from IRDA to offer cashless treatment, empanelment with CGHS etc., are some of the benefits that come to hospitals due to their ELC or FA status. Hence, irrespective of the gold or silver certificate, more hospitals are likely to go for NABH accreditation.

In contrast to Silver and Gold, the Bronze certificate does have some inherent benefits. Direct cost is meagre, and indirect cost does not seem high. Hence, with appropriate publicity, the likelihood of creating interest in hospitals for achieving a Bronze certificate seems to be fairly high compared to Silver and Gold certificates.

8.4. Future interest of the hospital

An important factor to consider here is that the whole QC programme aims to provide quality care to AB PMJAY beneficiaries. It is of utmost importance that empanelled hospitals that have progressed to the level of good quality remain interested and continue to serve AB PMJAY beneficiaries. Hence, it is important to understand conditions that may affect their interest positively or negatively.

As already postulated in the above section, the inherent benefit of the silver and gold certificates could be perceived as very limited. Hence, most empanelled hospitals that eventually enhance their quality by achieving ELC and FA status will do so for reasons unrelated to AB PMJAY. ELC and FA bring a host of other tangible and intangible benefits, which can potentially increase the utilization and revenue of these hospitals. From a purely business perspective, if the hospital's utilization increases and if the price-volume combination offered by AB PMJAY is less than the price-volume combination through other means (like private insurance companies or cash patients), then the interest in serving AB PMJAY may reduce. Hospitals with 'contribution to society as one of their purpose may continue serving AB PMJAY, but hospitals primarily driven by business enhancement are likely to gradually discontinue.

While the above possibility is purely theoretical and relies upon several conditions and assumptions, it would still be in the best interest of AB PMJAY to have a strategic plan for combating such a situation in case it arises.

8.5. Key points

1. Silver and Gold level certificates' ability to identify hospitals with the appropriate level of quality is dependent upon the robustness of the NABH accreditation system. While, at present, the NABH accreditation system appears to be robust enough, in future, any dilution of its effectiveness in assessing or identifying a hospital's quality will also dilute the ability of Silver and Gold certificates to determine a hospital's quality
2. The bronze certificate has its system of assessment and recognition by the hospital. So, validation of standards and reliability of the assessment method used for the Bronze certificate will be integral to establishing the link between the Bronze certificate and quality
3. While the Bronze certificate is not dependent on any other accreditation system, it primarily aims at initiating the hospital on a quality improvement journey. Hence, on its own, the Bronze certificate may not be sufficient in mainstreaming the level of quality that is desired in empanelled hospitals, and progressive levels of quality will be required

4. The benefit to hospitals for getting certified is fairly limited. Except for a 5% premium on the package price for the Bronze certificate and future expectation of benefit, the design of the QC programme does not indicate any additional benefit that can be perceived by empanelled hospitals for getting QC relative to those already available to it through ELC & FA under NABH
5. The cost of obtaining the Silver certificate for ELC hospitals and Gold certificate for FA hospitals is close to nil. So cost may not be a barrier for ELC and FA hospitals
6. The cost of obtaining the Bronze certificate is largely indirect and depends upon the existing condition of the hospital. The cost for hospitals with poor infrastructure and resources can be significantly higher than for hospitals with reasonably good infrastructure and resources. Thus better a non-accredited hospital is, the lower the cost barrier will be
7. The indirect cost of progressing from Bronze to Silver does not appear to be significantly high. However, the direct cost, in terms of accreditation fee for ELC, can be a deterrent to some hospitals
8. Both Direct and Indirect costs of progressing from Silver to Gold certificates can be significantly high due to major differences in the requirements of ELC and FA
9. Even though the inherent benefits are lacking, since the cost of getting certified for ELC and FA hospitals is close to nil, there is a good possibility of such hospitals still getting certified with appropriate awareness and publicity
10. However, for hospitals that are not already accredited, it is unlikely that they will go for ELC or FA by NABH (and, in turn, be eligible for a Silver or Gold certificate), especially if the hospital perceives the indirect cost of getting accredited as high
11. A bronze certificate does have some inherent benefits. Hence, with appropriate publicity, the likelihood of creating interest in hospitals for achieving a Bronze certificate seems to be fairly high when compared to Silver and Gold certificate
12. There is a theoretical possibility that empanelled hospitals that achieve ELC or FA may see an increase in their utilization. Suppose the price-volume combination offered by AB PMJAY is not competitive enough. In that case, their interest in continuing serving AB PMJAY may reduce purely for business reasons and shift focus on patients paying out of pocket. A strategy to combat such a situation may be required in the time ahead

9

Discussion, conclusion and recommendations

This study aimed to assess and identify policy measures necessary for mainstreaming quality improvement and quality assurance of care being provided by the empanelled hospitals to PMJAY beneficiaries. For this, the study explored the capacity and interest of empanelled hospitals for providing quality healthcare to AB PMJAY beneficiaries and assessed how existing policy measures under AB PMJAY and the Quality Certification system influence the quality improvement function at the empanelled hospital.

9.1. Summary of findings

Findings on comparison of the hospital with different levels of accreditation, based on physical observation and claim data, indicate capacity differences amongst empanelled hospitals. It was observed that the structure and processes were better in accredited hospitals compared to non-accredited, with FA hospitals having the best and least varying structure and process, followed by ELC and NA hospitals, respectively. Accredited hospitals were also found to be performing more super-speciality packages, and their TAT for claim settlement was found to be faster compared to non-accredited hospitals. These pieces of evidence suggest that accredited hospitals have a better capacity in terms of structure and processes to deliver higher quality patient care.

Feedback from stakeholders (hospitals and patients) and their actual participation in the quality certification system and PMJAY scheme explains how interest levels vary amongst empanelled hospitals. In interest to catering to PMJAY patients, the responses from hospitals were mixed. While almost all hospitals reported AB PMJAY package rates to be rather less attractive, the accredited hospitals were comparatively more disinterested in catering to AB PMJAY patients. Similar findings resonated in the patients' feedback, which showed the least level of satisfaction with accredited hospitals and better satisfaction with non-accredited ones. This could possibly be due to the different levels of interest these hospitals take in catering to the PMJAY patients. The finding that disproportionately more patients from accredited hospitals reported making the unexpected out-of-pocket payment is noteworthy. The findings from these two stakeholders indicate that interest in PMJAY patients seems to be higher amongst non-accredited hospitals and least amongst accredited ones. This is further supplemented by the finding that five out of the top six treatment packages claimed under the PMJAY scheme were significantly catered by non-accredited hospitals. In addition, a seemingly high proportion of accredited hospitals did not empanel for the AB PMJAY scheme.

In the interest of hospitals for participation in quality improvement, the quality certificate system of NHA seems to have produced limited results. Most hospitals do not see any specific benefit of Gold and Silver certificate. The overall penetration of QC amongst empanelled hospitals is also very low. Amongst public hospitals, it is close to negligible. A review of the QC scheme also did not suggest any specific value addition to quality improvement with the Gold and Silver certificate. The Bronze certificate, however, has some utility value in initiating a non-accredited hospital on the path to accreditation. A bronze certificate is also linked with a 5% premium to the standard package price, which could be attractive to several hospitals. In contrast to the QC system, most hospitals see definite value in NABH accreditation, both in terms of quality improvement and business income.

9.2. Conceptualizing healthcare quality

The conceptual definitions of quality differ as per their centricity. The customer-centric definition conceptualizes quality as meeting/exceeding customer expectations, while the product/service-centric definition considers quality as meeting stated specifications/norms. Both definitions apply when it comes to assessing quality in healthcare.

Customer satisfaction is considered a key outcome of healthcare[39] and a major determinant of the extent of viability and sustainability of any system designed to provide medical care. Patient satisfaction has been found to be a significant determinant of adherence to medical recommendations[41] and utilization of health plans.[39] Customer satisfaction is a crucial limitation when determining healthcare quality. Healthcare is considered a complex service whose quality is difficult for its customers (patients) to assess.[43] Due to this, peripheral services/features play an increased role in determining customer perception of quality and satisfaction. This can be seen from the dominance of peripheral factors in various recommended tools and models used to assess patient satisfaction.[30,44,45] High information asymmetry between patient and provider gives rise to the principle-agent problem, which can further distort, patients' perception of justified healthcare.[46] Thus, patient satisfaction alone cannot be considered a reasonable measure of healthcare quality. This, however, does not undermine the importance of patients' satisfaction. In fact, in assessing healthcare quality, patients' satisfaction can be an important but insufficient measure. Hence, the finding that non-accredited hospitals have been rated better by the patients only confirms that they catered to the PMJAY patients well but did not confirm the provision of quality healthcare. The noticeable finding from the patient satisfaction survey that a significantly higher number of patients from accredited hospitals reported making unexpected OOP expenditure could be one of the reasons for dissatisfaction with accredited hospitals, but this is not related to the quality of care.

Product/service-centric healthcare quality, like the one given by the Institute of Medicine (IOM)– *'The degree to which health services for individual and populations increases the likelihood of desired health outcomes and are consistent with current professional knowledge*[47] – implies that healthcare organizations that are more consistent with current professional knowledge and delivers better health outcomes can be considered to be offering better quality healthcare. The IOM definition does not consider patient satisfaction. Another definition of quality given by ISO that incorporates customer needs is – *'The totality of features and characteristics of a product or service that bears on its ability to meet a stated or implied need'*[48], which is a more inclusive one. By incorporating a customer-centric definition, we can conceive a healthcare organization delivering an ideal level of quality as an organization providing healthcare consistent with current professional knowledge, delivering better health outcomes and meeting customer expectations.

9.3. Current situation of quality in AB PMJAY hospitals

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 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 are not substantial, the difference could well be compensated by the assurance of volume of work and long-term revenue visibility that can come 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. This also signals a need to devise more dynamic provider payment mechanisms such as diagnosis-related groups (DRGs) that can account for patient-level variation while determining reimbursement rates for specific hospital episodes.

The lack of utility value can explain the low penetration of the quality certification system 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, Gold and Silver certificate adoption may not change much in the future. In contrast, a bronze certificate may have some improvement in its acceptance subject to awareness creation. However, the impact of the bronze certificate 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 faced 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 findings of our study, especially those related to physical observation and hospital interviews, could be generalized to the non-Covid time.

9.4. 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. This is manifested in patient satisfaction survey findings, where the satisfaction levels were found lower in hospitals with a higher level of accreditation and a lower proportion of accredited hospitals empanelling with the PMJAY scheme. The difference in interest level is understood to be because of the difference in perception of the adequacy of treatment package price paid by AB PMJAY to hospitals, with accredited hospitals most discontented with the price.
- A negative externality of this perception of the adequacy of the package price is that patients reportedly end up paying out of pocket in higher accredited hospitals (potentially due to higher cost structures that accredited hospitals need to price for), thereby defeating the purpose of PMJAY to provide financial protection. However, given the analysis's sample size and cross-sectional nature, more nuanced research into this area may be warranted.
- The difference in the level of interest of hospitals is also reflected in claims data, where non or lower-level accredited hospitals share a higher proportion of treatment. However, due to capacity differences, the proportion of high-end treatment is higher in accredited hospitals. This indicates that there is a dependency on accredited hospitals for the provision of tertiary care.

- NABH accreditation system was observed to be effective in identifying and classifying hospitals as per their capacity to provide quality care. The higher the level of accreditation, the better the hospital's structure and process capability; however, the difference between FA and ELC hospitals is significantly more than between non-accredited and ELC hospitals. The process of NABH accreditation preparation is suggestive of having the potential to improve the processes in a hospital, thus enhancing the quality of care. Other than quality improvement, the NABH accreditation also has brand value and benefits in the form of business opportunities.
- 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 be positively influencing the interest of already 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, the acceptance of the QC system is low amongst hospitals. The exception to this conclusion is the Bronze certificate which initiates the hospitals from no accreditation to a path of quality improvement journey and also has some monetary incentive. Public hospitals have a very negligible adoption of the QC system.

9.5. 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.

9.5.1. 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 sensitization 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 a comprehensive healthcare quality across the board. For this, a wider strategy that addresses all the defining components of healthcare will be needed. Specific recommendations in this regard are presented below.

9.5.2. 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.(49,50) 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 rationalization for full accredited hospitals** - Pricing is the single greatest lever that can be used to influence the suppliers and quality of suppliers significantly. (51) Since the price was observed to be a concern, specifically for accredited - high-priced hospitals, a review of price plus incentive paid to the need to be done in light of expectations of accredited hospitals market. It is likely that the price plus incentive paid to the accredited hospital will need to be revised upward, and this can possibly have 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. (52) Such a system is better placed to standardize 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. (53) Several studies across different countries have documented evidence of improved health outcomes after the introduction of DRG based payment system. (52,54,55) 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.

- **Incentive for numbers** - One effective option to motivate accredited hospitals in catering to more PMJAY patients is to pay them an incentive for achievement of 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 standardization in healthcare treatment by utilizing well-designed and mutually agreed standard treatment guidelines (STG) and a medical audit system. At present, PMJAY is just about initiating the journey of ensuring STGs as an important lever for overseeing provider performance. However, this will require time to evolve. In the absence of STGs, greater subjectivity may ensue in the audits done as part of claim processing and create a difference of opinion between claiming hospitals and claim processing agencies, thereby slowing down turnaround times and reducing provider interest in the scheme.

- **Standard Treatment Guidelines** - Clinical protocols or Standard treatment guidelines are key to quality healthcare delivery.[56] Such guidelines provide mutually agreed clinical standards to which healthcare providers can work and against which they can be audited.[56] NHA has initiated the rollout of STGs across various specialities, though it is important that it be kept in mind that this will need to evolve dynamically, taking the current professional knowledge into consideration. The system of STG development should ensure regular updating as and when a change in professional knowledge occurs. This can be a complicated and time-consuming task, but considering its long-term utility, the institutionalization of such a process and constant refinement of practice will be an important part of strengthening the clinical quality of care under PMJAY.
- **Medical audit system** - Medical audit has been established as a valuable tool to improve healthcare quality.[57,58] 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
    * **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 on a periodic basis. 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 rationalization and compliance to treatment protocol can enhance healthcare quality, ensuring the commitment of healthcare providers in realizing 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.[59]. It is known by various names, such as quality-based payment, outcome-linked incentive, payment by the result, outcome-based purchasing, and pays for performance. The central idea of this concept is to use payment as a method to motivate healthcare providers to put in their best effort to achieve desired healthcare outcome. This is in contrast to the traditional method, where the providers are paid for the work they do, which does not factor in the result of the work sufficiently. Pieces of evidence worldwide suggest that the traditional payment system motivates the providers to do more work, which influences them for demand inducement, but creates little accountability for the achievement of outcomes. Several examples of such models

with varying degree of success exist; however, the differences in context and priorities requires that each healthcare system develop its own customised model keeping desired results and feasibilities into consideration. The studies also indicate mixed results with a performance-based payment system. Some of the examples of payment linked to outcomes are described below for the purpose of reference:

1. The Centre for Medicare and Medicaid Services (CMS) uses a value-based programme to reward health care providers with incentive payments for the quality of care they give to people with Medicare. These programs are part of their larger quality strategy to reform how health care is delivered and paid for. Under this, they have 5 original value-based programs, and their goal is to link provider performance of quality measures to provider payment. This value-based program includes End-Stage Renal Disease Quality Incentive Program, Hospital Value-Based Purchasing, Hospital Readmission Reduction Program, Value Modifier Program and Hospital-Acquired Conditions Reduction Program. As an example, the hospital readmission reduction programme uses excess re-admission ratio (ERR) for different conditions to assess hospital performance. The ERR measures a hospital's relative performance and is a ratio of the predicted-to-expected readmissions rates. Payment is reduced for hospitals whose performance on readmission rate is more than ERR.[60]
2. In the UK, National Health Services (NHS) implemented a quality and outcome framework in 2004 under which they started to pay for performance programmes. 146 quality indicators covering 10 chronic diseases, organization of care and patient experience were used to determine the performance of providers. For example, when doctors periodically review the patient suffering from asthma, they get performance points. Incentives to doctors were linked to the performance points they make in a given period.[61]
3. In 1998, the Costa Rica Social Security Institute—distinct from its public hospital incentive program - signed a performance contract with COOPESALUD, a private, employee-owned cooperative, for primary health care services. Performance standards included technical quality standards (e.g. existence of a commission to analyze maternal and infant deaths) and interpersonal quality standards (e.g. existence of a consumer suggestion and resolution system). The Institute reduced COOPESALUD's budget by up to 2.5% if less than 90% of performance targets were reached during the previous 6-month period.[62]
4. In 2009 in France, pay for performance system was introduced in ambulatory care. Contracts were signed between physicians and statutory health insurance, termed as CAPI (Contrat d'Amélioration des Pratiques Individuelles). Within less than 1.5 years, they signed 14,800, covering about one-third of eligible GPs. Contracts were signed on a voluntary basis for a three-year period and can be terminated at any time by GP. The payment to GP under the contract was based on the size of the population they cover and the achievements for a number of indicators that cover clinical care, prevention and generic prescription. An intermediate and final targets intermediate targets were defined for each indicator using baseline measures of the GP's practice. Either final or intermediate targets were considered in determining the level of remuneration. There were no penalties for GPs who did not achieve the targets. With effect in 2012, CAPI was renamed ROSP (Rémunération sur Objectifs de Santé Publique) and incorporated into the collective agreements between doctors and statutory health insurance, with an expanded list of objectives and an extension to specialities such as cardiology. A 2017 study conducted to evaluate the effect of the French pay-for-performance program found that all hospital that signed contracts improved their performance; however, the result was not significantly different from the control.[63]

The above examples show that performance-based payment is feasible in healthcare; however, an extremely customized 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 realizing those outcomes.

We recommend that NHA consider developing a customized 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 the performance of a hospital 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 (as well as 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 incentivized. Similarly, hospitals whose patient satisfaction rating is more than one standard deviation of the overall average can be incentivized.

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, strengthening the rollout and implementation of STG will support the development of measurable outcomes, enabling NHA to use it as a reliable measure for performance-linked incentives. Similarly, the creation of a competitive environment will push hospitals to improve their quality score so as to gain image and market share.

The above recommendations are grounded in established theories of healthcare quality and are presented considering the examples of models implemented in different parts of the world for quality improvement. If implemented in its entirety, it is likely that a perceptible improvement in healthcare quality in AB PMJAY empanelled hospitals could be seen over time and help the scheme achieve its strategic objective of ensuring financial protection while guaranteeing good quality care.

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Annexure

Annexure I: Hospital Profile Format

HEALTH SYSTEMS ASSESSMENT FOR AB PMJAY

Mainstreaming quality in empanelled hospitals under AB PMJAY

Date of visits: .....

Name of RA: .....

Name and address of hospital: .....

Website: .....

Area .....

Ownership: Public/Private/Charitable .....

Date of establishment: .....

Total beds: .....

Bed categories – Single rooms, general wards,

ICU beds: .....

Emergency beds: .....

Day Care Beds: .....

List of specialities: .....

Head of the hospital, with designation and contact number .....

Quality manager/coordinator with contact details .....

Medical superintendent/medical director with contact details .....

Nursing head with contact details: .....

General Manager with contact details: .....

Infection control head with contact details .....

MRD head with contact details .....

Ayushman Mitra with contact details .....

Any other .....

Date of empanelment with AB PMJAY .....

Certificate Number: .....

Date of accreditation (with the date of progression) .....

Other accreditations .....

Other empanelments .....

Workload data

1. Daily/annual OPD
2. Daily/annual admissions
3. Daily/annual emergency footfall
4. Daily/annual major surgeries

AB PMJAY data

1. Yearwise/month-wise number of patients admitted under AB PMJAY
2. Yearwise/month-wise claims submitted for AB PMJAY
3. Yearwise/month-wise claims amount received under AB PMJAY
4. Claims declined

Pricing

1. OPD charges
2. Category-wise bed rates
3. Schedule of charges (tariff list)

Secondary data

1. Quality indicator reports
2. Infection rates reports
3. Self-assessment report
4. Hospital statistics (MIS report)
5. Workload reports
6. HR list (designation-wise staff)
7. AB PMJAY claims data

Annexure II: Hospital Observation Checklist

HEALTH SYSTEMS ASSESSMENT FOR AB PMJAY

Mainstreaming quality in empanelled hospitals under AB PMJAY

FORM NO. 2 - HOSPITAL OBSERVATION CHECKLIST

A. General Information

Name of hospital:
City:
Hospital ID:
Date of observation:
Observed by
Department/Area observed - (OPD/IPD/Emergency/General): insread of -

B. OBSERVATION

1. Structure-related observation

Rating mechanism

0 - if the observation point is completely absent in the hospital

1 - very poor

2 - below average

3 - average

4 - good

5 - very good/excellent

NA - Not applicable

Remarks - Write key remarks wherever applicable in support of the rating given

Structure related observations	Rating (0-5)					Remark
	OPD	Emgcy	IPD	Other	Overall	
Fire-fighting resources, structures and installations? (like fire extinguishers, fire hose points, fire alarms, emergency exit routes etc.)					xxx	
Adequacy of way-finding signage					xxx	
Disable friendly structures (disable friendly toilets, availability of ramp or lift for wheelchair movement etc.)					xxx	
Basic amenities for patients, staff and visitors (like seating space, toilets, drinking water, fans, lights etc.)					xxx	
Sufficiency of lighting and illumination for visibility					xxx	
Adequacy of space for movement of people					xxx	
Ease of accessing crash cart during a cardiac emergency					xxx	
Hand Hygiene structures (like easy availability of hand wash basins, hand rub or sanitisers installed)					xxx	
Observed nurse : patient ratio	xxx	xxx		xxx	xxx	
Availability of sufficient wheelchairs and stretchers for patients					xxx	

Structure related observations	Rating (0-5)					Remark
	OPD	Emgcy	IPD	Other	Overall	
Wheelchairs and stretchers equipped with safety belts for transferring patients					xxx	
Prominently and clearly displayed scope of services displayed, with services not in the scope mentioned and in English and local language	xxx	xxx	xxx	xxx		
Prominently and clearly displayed 'Patients Rights' in English and local language	xxx	xxx	xxx	xxx		
Clearly displayed information for AB PMJAY beneficiary patients	xxx	xxx	xxx	xxx		
Accessibility of ambulance to the emergency entrance	xxx		xxx	xxx	xxx	
Structure/arrangement to maintain the privacy of patients during examination (like curtains, separate examination room etc.)					xxx	

2. Process-related observation

Rating mechanism

1 - If the process is very poorly defined or implemented and not in accordance with NABH practices

2 - If the process is poorly defined/implemented and not in accordance with NABH standards

3 - If the process is in accordance with NABH standards and partially implemented

4 - If the process is in accordance with NABH standards and mostly implemented

5 - If the process is very efficiently implemented in accordance with NABH standard

0 - If the hospital does not have the process at all

NA - If the process is not applicable to the hospital

Remarks - write key remarks, wherever applicable

Process related observations	Rating (0-5)	Remark
Mass casualty handling system		
Code blue system		
Code pink system		
Code red system		
Patient identification system		
Medical Record keeping system		
Informed consent system		
Patient's grievance redressal system		
Patient feedback-taking system		
Informing patients about patient's rights		
System for reporting critical test results (Lab/radiology)		
Internal peer review for imaging tests		
External quality assurance programme for laboratory		
Standard protocols for imaging tests		
Standard protocols for lab tests		
Quality Indicator monitoring system		
Hazardous spills handling system		
Policy for handling Look Alike Sound Alike medicine		

Process related observations	Rating (0-5)	Remark
Surgical safety checklist process to avoid surgical errors		
Medical administration process for avoiding medication errors		
Policy available for managing patients during non-availability of beds		
Process for availing treatment under AB PMJAY		
Process for transferring unstable patients		
Policy/criteria for admitting patients in ICU		
Antibiotic Policy		
Hospital-Acquired Infection surveillance system		
Policy for restraint of patients		
End-of-life care policy and process		
Credentialing and privileging of doctors		
Internal audit system for quality assurance		
Facility inspection round for patient safety		
Visitors policy		

3. Outcome-related observation

Rating mechanism

1 - very poor

2 - below average

3 - average

4 - good

5 - very good/excellent

NA - Not applicable

Remarks - Write key remarks wherever applicable in support of the rating given

Outcome related observations	Rating (0-5)					Remark
	OPD	Emgcy	IPD	Other	Overall	
How was the observed cleanliness level?						
How well was the building facility maintained?						
How well was the equipment maintained?						
How was the crowd management?						
How convenient was it to locate key areas of the hospital where the patient may have visited?						
How was the staff's behaviour towards the patients/visitor?						
Sufficiency of staff for the number of patients in the hospital?						
How well was the Biomedical waste segregated?						
Observed waiting time						
Facilitation of AB PMJAY beneficiary patients						
How well was the patient's privacy is maintained?						
How well was the confidentiality of patient's information maintained?						

Outcome related observations	Rating (0-5)					Remark
	OPD	Emgcy	IPD	Other	Overall	
How well were the radiation safety practices being followed?						
How well were the hand hygiene practices being followed by staff?						

4. Organization for quality and safety

Organization and resources for Quality management?

1. Designated person available for quality management functions - (Yes / No/Partially)
   .....
2. A dedicated team is available for quality management functions - (Yes / No/Partially)
   .....
3. Quality Manual or Written Policy/Procedure manual available - (Yes / No/Partially)
   .....
4. A functional Quality committee is there in the hospital - (Yes / No/Partially)
   .....
5. Quality audits are conducted - (Yes / No/Partially)
   .....

Organization and resources for Infection Control

- Infection control officer or a designated person available for Infection Control functions - (Yes / No/Partially) .....
- Designated Infection control nurses - (Yes / No/Partially)
  .....
- Infection Control Manual available - (Yes / No/Partially)
  .....
- A functional Infection control committee is there in the hospital - (Yes / No/Partially)
  .....

Other General remarks or observations not included in the above checklist

Annexure III: List of hospitals for direct observation

Hospitals for physical visits and primary data collection				
S.N	**Hospital Name**	**Hospital ID**	**State**	**District**
1	Capt Nandlal Yadav Hospital	HOSP6P71843	Haryana	Rewari
2	Dr S P Yadav Multispeciality Hospital	HOSP6P01974	Haryana	Rewari
3	R Yadav Surgical And Rekha Eye Hospital	HOSP6P03948	Haryana	Rewari
4	Riti Eye Care Hospital	HOSP6P01785	Haryana	Rewari
5	Park Hospital A Unit Of Aggarwal Hospital And Research Services Pvt Ltd	HOSP6P01620	Haryana	Faridabad
6	Pawan Hospital Unit 2	HOSP6P05442	Haryana	Faridabad
7	Sarvodaya Hospital And Research Centre A Unit Of Anshu Hospitals Ltd	HOSP6P68610	Haryana	Faridabad
8	Aarna Superspeciality Hospital	HOSP24P10245	Gujarat	Ahmadabad
9	Galaxy Heart Institute	HOSP24P67748	Gujarat	Mahesana
10	Hcg Hospitals Ahmedabad	HOSP24P67839	Gujarat	Ahmadabad
11	Health And Care Foundation	HOSP24P10671	Gujarat	Ahmadabad
12	Max Superspeciality Surgical Hospital	HOSP24P15780	Gujarat	Ahmadabad
13	Shaishav Children Hospital	HOSP24P111258	Gujarat	Mahesana
14	Shankus Hospitals	HOSP24P12495	Gujarat	Mahesana
15	Chandan Hospital Limited	HOSP9P05433	Uttar Pradesh	Lucknow
16	Fortune Hospital	HOSP9P01085	Uttar Pradesh	Kanpur Nagar
17	Green City Hospital	HOSP9P02141	Uttar Pradesh	Lucknow
18	Jeevan Hospital And Trauma Centre	HOSP9P19721	Uttar Pradesh	Lucknow
19	Mangla Multispeciality Hospital Private Limited	HOSP9P00929	Uttar Pradesh	Kanpur Nagar
20	Shekhar Hospital Pvt Ltd	HOSP9P02763	Uttar Pradesh	Lucknow
21	Vidhya Hospitals And Trauma Centre	HOSP9P02363	Uttar Pradesh	Lucknow

Annexure IV: Interview questions for Quality Certified Hospitals

HEALTH SYSTEMS ASSESSMENT FOR AB PMJAY

Mainstreaming quality in empanelled hospitals under AB PMJAY

FORM No. 3 - Interview guide for study hospitals to explore reasons and intentions for acquiring the quality certificate

A. Basic details (to be filled from secondary data)		
Hospital Name:	Bed Strength:	State and District:
Specialities:	Empanelment date:	Public/Pvt/Pvt not-for-profit
Certification level: Bronze/Silver/Gold/Other (specify)		
Date of accreditation/certification (with progress to higher levels)-		
B. Basic details of responder		
Name:	Designation:	
Duration with hospital:	Date of interview:	

C. Guiding questions for the hospital that has achieved the quality certificate

1. When did your hospital decide to go for quality certification?
2. What was the purpose of getting certified for quality?
3. In your opinion, in which ways did the patient care services improve because of the implementation of the quality certification system?
4. In your opinion, has the quality certificate improved the image of your hospital?
5. What are the benefits/incentives of getting certified?
6. Did you progress to a higher level of quality? If not, why?
7. Did you face any difficulties in the process of certification? If yes, then please elaborate.
8. What challenges are you facing in maintaining the quality certificate requirements?
9. How did you find the process of getting certified for quality?
10. What problems/obstacles did you face in getting certified?
11. How easy or difficult was the implementation of quality certification requirements in the hospital?
12. Any major problem you are faced with in achieving quality certification?
13. How is the monitoring or oversight of certifying authority?
14. Did the quality certification system create any operational challenges in the hospital?
15. What rating will you give to the quality certification process based on your overall experience? (on a scale of 1 to 5, with 1 indicating very poor rating and 5 indicating best rating)
16. In your opinion, how can the quality certification system impact the quality of care at AB PMJAY hospitals?
    - 16.1. Can have negative impact
    - 16.2. Will not have any impact
    - 16.3. Can have a mild positive impact
    - 16.4. Can have a moderately positive impact
    - 16.5. Can have a very big positive impact
17. How likely are you to continue with your quality certificates in future
    - 17.1. Very unlikely
    - 17.2. Slightly unlikely
    - 17.3. Neither likely nor unlikely
    - 17.4. Slightly likely
    - 17.5. Very likely
18. Your suggestions on what measures can be taken by the government to enhance the quality of care at empanelled hospitals?.....

Annexure V: Interview questions for non-certified Hospitals

HEALTH SYSTEMS ASSESSMENT FOR AB PMJAY

Mainstreaming quality in empanelled hospitals under AB PMJAY

FORM No. 4 - Interview guide for control hospitals to explore reasons for not acquiring the quality certificate and future intentions

A. Basic details (to be filled from secondary data)		
Hospital Name:	Bed Strength:	State and District:
Specialities:	Empanelment date:	Public/Pvt/Pvt not-for-profit
Certification level: Bronze/Silver/Gold/Other (specify)		
Date of accreditation/certification (with progress to higher levels)-		
B. Basic details of responder		
Name:	Designation:	
Duration with hospital:	Date of interview:	

C. Guiding questions for the hospital that has achieved the quality certificate

1. Are you aware of the quality certification system for AB PMJAY empanelled hospital? Can you elaborate?
2. Are you aware of the advantages/incentives provided by AB PMJAY for getting certified?
3. What are the main reasons for not achieving/applying for the certification?
4. What benefits would you seek for getting certified?
5. What problems have you faced with AB PMJAY so far?
6. How has been your experience with AB PMJAY so far
   - 6.1. Very Good
   - 6.2. Good
   - 6.3. Neither good nor bad
   - 6.4. Bad
   - 6.5. Very bad
7. How likely will your hospital go for quality certification in the near future?
   - 7.1. Very unlikely
   - 7.2. Slightly unlikely
   - 7.3. Neither likely nor unlikely
   - 7.4. Slightly likely
   - 7.5. Very likely
8. What level of NABH accreditation do you have
   - 8.1. No accreditation
   - 8.2. Entry Level
   - 8.3. Full accreditation
9. If you are not accredited by NABH but are planning to get NABH accreditation in the near future
   - 9.1. Yes
   - 9.2. May be
   - 9.3. No
   - 9.4. Undecided
10. Your suggestions on what measures can be taken by the government to enhance the quality of care at empanelled hospitals?.....

Annexure VI: Authorities and key staff interviewed from hospitals

District	Study Hospitals	Stakeholders interviewed
Faridabad	Park Hospital A Unit Of Aggarwal Hospital And Research Services Pvt Ltd	Deputy General Manager Operations ABPMJAY AM
	Pawan Hospital Unit 2	Administrator Manager TPA Corporates cum ABPMJAY AM
	Sarvodaya Cancer Centre	Senior Consultant – Medical Oncology and BMT HOD ABPMJAY AM
Rewari	Capt Nandlal Yadav Hospital	Director ABPMJAY AM
	Dr S P Yadav Multispeciality Hospital	Director Manager cum ABPMJAY AM
	R Yadav Surgical And Rekha Eye Hospital	Director
	Riti Eye Care Hospital	Administrator
Lucknow	Chandan Hospital Limited	Medical Superintendent
	Green City Hospital	Director ABPMJAY AM
	Jeevan Hospital and Trauma Centre	Director Quality Officer
	Shekhar Hospital Private Ltd.	General Manager Infection Control Nurse Director
	Vidya Hospital and Trauma Centre	Quality Manger cum Consultant
Kanpur Nagar	Fortune Hospital	Quality Head ABPMJAY AM
	Mangla Multispeciality Hospital Private Limited	Director Manager ABPMJAY AM
Ahmedabad	Aarna Super speciality Hospital	Chief Executive Officer Chief Operating Officer HR Assistant cum ABPMJAY AM
	HCG Hospitals	Chief Operating Officer Asst. Medical Administrator Senior Quality Executive Manager Operations Non- Medico Coordinator cum ABPMJAY AM
	Health and Care Foundation	Chief Operating Officer Head HR and Administration Medical Superintendent Senior Executive Officer ABPMJAY AM
	Max Super speciality Surgical Hospital	Director
Mahesana	Galaxy Heart Institute	Managing Director HR Manager ABPMJAY AM
	Shaishav Children Hospital	Medical Director General Manager cum ABPMJAY AM
	Shankus Hospitals	Business Development Head Coordinator Back office cum ABPMJAY AM

Annexure VII: Patient Satisfaction Survey Questionnaire

HEALTH SYSTEMS ASSESSMENT FOR PMJAY

Mainstreaming quality in empanelled hospitals under PMJAY

FORM NO. 5 - Patient satisfaction questionnaire - adapted from PSQ-18

A.	Hospital's details (to be filled from secondary data)		
	Hospital:	Location:	Certified/Not certified:
	Bed Strength:	Ownership:	Specialities:
B.	**Patient's details (to be filled from secondary data)**		
	Gender:	Age:	Hospitalization period:
	Medical/Surgical:	Package:	

C. Questionnaire						
S.N.	**Statements**	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
1.	Doctors were good about explaining my medical condition and treatments					
2.	I think the hospital had everything needed to provide complete medical care					
3.	The medical care I received was just about perfect					
4.	Sometimes I wondered if they diagnosed my problems correctly					
5.	I feel confident that I will get the medical care that I need without any financial setback					
6.	The medical staff are careful to check everything when treating and examining me					
7.	I have to pay for a certain thing that I didn't expect					
8.	I have easy access to a specialist doctor that I needed					
9.	In the hospital where I got treated, people had to wait too long for their turn					
10.	They behave too business-like and impersonal towards me					
11.	They treated me in a very friendly and courteous manner					
12.	They sometimes hurry too much when they treat me					
13.	They sometimes ignore what I tell them					
14.	I have some doubt about the ability of the doctor who treated me					
15.	The doctor usually spends plenty of time with me					
16.	I found it hard to get admission to this hospital					
17.	I am dissatisfied with something about the medical care that I receive					
18.	I can get medical care from this hospital whenever I need					

Your overall rating to the hospital on a scale of 1 to 10, with 1 being least satisfied and 10 being highly satisfied.

1…..2…..3…..4….5….6…..7….8….9….10

Date:.....

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To ensure health outcomes for beneficiaries and value for money for payers, there must be a minimum standard of quality for healthcare services. This report 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).