

# Identifying Opportunities for Improvement Using Accreditation Standards in a Public Sector Ophthalmichospital in India

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## Abstract

**Background:** Quality of healthcare services, patient safety and staff satisfaction the essence of accreditation, are indispensable to favourable patient outcomes. This study aimed at identifying opportunities for improvement based on extent of conformance to existing applicable accreditation standards.

**Method:** A cross-sectional observational study was conducted in an apex public sector ophthalmic hospital in India during March and April 2016. Opportunities for improvement identified based on extent of compliance to accreditation standards as per criteria laid in NABH self-assessment toolkit. Reviews of hospital departments, services and functions were done through document review; visit to different patient care areas; staff and patient interviews were conducted. A sample of ten observations was taken for each objective element from same or different areas based on applicability and scored as full, partial or non-compliant (0, 5, 10 respectively). Gaps were identified based on score less than 50% of aggregate or individual standard with more than two zeros.

**Results:** Hospital was compliant to accreditation standards of NABH with an overall score of 74%. All regulatory requirements met. Opportunities for improvement identified were related to quality assurance of labs, cardio-pulmonary resuscitation, pain assessment, awareness and reporting of medication errors, redressal mechanism, effective implementation of patient safety and quality improvement programmes. Continuous quality improvement chapter had lowest compliance (39%).

**Conclusion:** The hospital met accreditation requirements except those related to documentation and continuous quality improvement (an advanced stage of accreditation) amongst few others which are predominantly specifically oriented to accreditation related activities. The study delineates how the identified opportunities can be met based on interpretation of the standards. The study is limited by the fact that documentation in the form of circulars and a Residents' Manual which are not as per the requirements of NABH have been considered.

**Keywords:** Accreditation; Patient safety; Quality Improvement; Hospitals.

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## Introduction

Accreditation is a form of external peer review and public recognition of organizational level of performance in relation to pre-determined and published standards of processes, structures and outcome.<sup>1-3</sup> Anecdotal evidences have led to adoption of such accreditation in many countries since the 1980s. Although limited studies show benefits in terms of patient outcomes, indirect impact on systems and practices have been

noted in literature. According to a study in United States of America, accredited hospitals perform better on quality indicators and non-accredited hospitals had lower quality and higher thirty-day mortality rates.<sup>4</sup> In a study in Europe, patient outcome was better when the health facility was at a more advanced phase of accreditation.<sup>5</sup> Accredited hospitals show significant improvements in nursing organisation and safety, provides an opportunity to reflect on practices, quality and dissemination of clinical guidelines and impact at systems level.<sup>6</sup> Public perceives accredited hospitals to have higher quality of patient care.<sup>7</sup> These have high level of patient and staff satisfaction.<sup>8</sup>

With limited use of clinical outcome measures in accreditation research, possibility of establishing causal links with accreditation requires careful consideration and available evidence does not justify a rejection of the validity of accreditation programmes.<sup>9</sup>

In India, National Accreditation Board for Hospitals and Healthcare Providers (NABH) is the constituent board of Quality Council of India that has established accreditation programmes for hospitals, blood banks, etc. These standards have been accredited by International Society for Quality in Healthcare in consonance with global benchmarks.<sup>10</sup> Other accreditation programmes in vogue in India is that of Joint Commission International. Indian Public Health Standards are a set of reference uniform standards for public health care infrastructure planning and up-gradation envisaged to improve the quality of health care delivery in the country. International Organisation for Standardisation also develops standards on which certification is offered.

This study aimed at finding the gaps or non-conformance to applicable NABH standards for ophthalmic hospital in India. These standards assure that quality of patient care and safety are at par with international benchmarks. This would help the hospital advance to a stage where it can improve up on the gaps and go for a formal accreditation.

## **Materials and Method**

A cross-sectional study was conducted in a public sector ophthalmic hospital in India during March and April 2016. NABH Accreditation Standards for Hospitals 3<sup>rd</sup> edition 2011<sup>11</sup> were used to identify the opportunities for improvement. The various domains of the toolkit pertained to five “Patient Centered” and five “Organisation Centered” quality standards. “Patient Centered” quality

standards: Access, Assessment and Continuity of Care (AAC) standards broadly involves matching patients with organisation’s resources, providing life-stabilising treatment, defined admission process, assessment, including laboratory and imaging services provided by competent staff in a safe environment resulting definite plan of care that encourages continuity of care. Care of Patients (COP) standards encourage uniform care to all patients, promoting adherence to policies, procedures, applicable laws and regulations to guide and encourage patient safety as the overall principle for providing care to patients. Medication management (MOM) encourages safe and organised medication process encompassing availability, safe storage, prescription, dispensing and administration of medications including high-risk medication, blood, implants, devices and medical gases to ensure patient safety. Patient Rights and Education (PRE) standards address patient information about the disease, possible outcomes, costs & grievances handling and consent for informed decision making. Hospital Infection Control (HIC) standards guide provision of infection control programme aimed at reducing/eliminating infection risks to patients, visitors and providers of care. Organisation Centered quality standards: Continual Quality Improvement (CQI) standards encourage documented quality and safety programme. Data on structures, processes and outcomes, especially in areas of high-risk situations including sentinel events is collected, analysed and used for further improvements. Responsibilities of Management (ROM) standards encourage governance led by a suitably qualified and experienced individual in a professional and ethical manner with defined responsibilities of the management. All applicable regulations are complied with and leaders ensure patient-safety as an integral part. Facility Management and Safety (FMS) standards guide the provision of a safe and secure environment for patients, their families, staff and visitors through regular facility inspection rounds and appropriate action to ensure safety. The organisation provides for safe water, electricity, medical gases and vacuum systems and has equipment management programme. Human Resource Management (HRM) standards emphasise on provision of competent people, training, motivation by job design, performance appraisal and discipline and relates to their safety and health. Information Management System (IMS) standards ensure that data and information support delivery of quality care and service by providing right information in an authenticated, secure and accurate manner at the right time and place.

Reviews of hospital departments, services and functions were done through document review; visit to different patient care areas; staff and patient interviews were conducted to assess the extent of compliance with NABH Accreditation Standards for Hospitals 3<sup>rd</sup> edition 2011.<sup>11</sup> A sample of ten observations was taken for each objective element from same or different areas of the hospital based on applicability. Scoring was based on criteria in self-assessment toolkit. For assessing compliance to an applicable objective element, documented policy or procedures were sought (wherever applicable) and marked as 'Yes' or 'No'. The practical implementation was observed in terms of practices carried out and procedures followed. Evidences of

such practices were also sought. Partial compliance to requirement was given a score of '5' if any of the samples was found to be non-compliant out of total samples selected or documentation was unavailable, but implementation was evident. Full compliance was scored '10' and non-compliance '0'. Not applicable standards were not scored. Gaps were identified based on score less than 50% of aggregate or individual standard with more than two zeros. Since formal documented policies were largely in the form of circulars and a resident manual, these were considered. Compliances status were reported in NABH assessment format/tool-kit (table 1) as prescribed by NABH.

**Table 1: Assessment format**

S.No.	Objective Element	Documentation (Yes/No)	Implementation (Yes/No)	Evidence (Cross Reference)	Score (0/5/10)

### Findings/Results

Table 2 shows that compliance with patient-centered standards (80%) was found to be higher compared to organisation-centred standards (69%). The overall average score for all chapters was 74% (range 42%-88%). Only one chapter, i.e., Continuous Quality Improvement (score 42%) had a score less than 50%. Out

of the 636 standards, scores were found to be less than 50% for 9 standards. The median (min-max) score was 80% (0%-100%) for the standards. All the regulatory legal requirements were fully met. The standards not found to be applicable were regarding ambulance services, obstetric care, moderate sedation, restraint, end of life care and usage of radioactive drugs.

**Table 2: Chapter wise scores**

S. No.	Chapter	Actual Scores	Total Scores	Percent Scores
1.	Access, Assessment and Continuity of Care (AAC)	635	860	74
2.	Care of Patients (COP)	845	1030	82
3.	Management of Medication (MOM)	515	690	75
4.	Patient Rights and Education (PRE)	405	460	88
5.	Hospital Infection Control (HIC)	420	490	86
	Patient-Centered Standards	2740	3530	80
6.	Continuous Quality Improvement (CQI)	240	570	42
7.	Responsibilities of Management (ROM)	335	380	88
8.	Facility Management and Safety (FMS)	440	530	83
9.	Human Resource Management (HRM)	425	520	81
10.	Information Management System (IMS)	235	420	56
	Organisation-Centred Standards	1635	2400	69
	Overall	4375	5930	74

**Opportunities for improvement identified:** Standards with scores of less than 50% were related to laboratory

quality assurance programme, cardio-pulmonary resuscitation policies, pain management, reporting of near misses, medication errors and adverse drug events, patient-safety programme, key indicators to monitor the clinical and managerial structures, processes and outcomes, system for clinical audit and review of medical records.

Practices related to quality assurance in laboratory such as running controls, surveillance of test results and periodic calibration and maintenance of all equipment are in compliance with relevant standards, but documentation is lacking. Corrective and preventive actions are also not documented.

In terms of care of patients, there are no documented policies and procedures to guide care of patients requiring cardio-pulmonary resuscitation (CPR). There is no procedural checklist. Post-event analysis of CPR is not done by any multidisciplinary committee and hence corrective and preventive measures (CAPA) are not taken based on the post-event analysis. The events are not recorded in any pre-defined format. Analysis or CAPA for these events are not carried out. The policies and procedures for pain management are not in place. No pain rating scales are used for painful eye conditions like glaucoma, etc.

Regarding the management of medications, there is a hospital formulary/essential drug list developed and updated but it is not available readily with doctors. There are no documented procedures to capture near miss, medication error and adverse drug event. There is no awareness among the staff. There is no reporting, collection or analysis or any corrective and preventive actions taken.

Although there are complaint/suggestion boxes for complaint redressal and the hospital has a Citizen's charter which mentions the "right to complain" but does not mention how and where to complain. Patient and/or family members are not made aware of the procedure for lodging complaints.

Sporadic quality improvement initiatives have been undertaken, but the programme is neither documented nor communicated and coordinated amongst all the staff. Service standards and indicators are not defined for all the areas.

There is neither a structured documented patient-safety programme nor a safety committee. There is no

designated individual for coordinating and implementing the patient-safety programme. No patient safety rounds are conducted and no key safety indicators exist. Patient identification is promoted through unique hospital identification (UHID) and name of the patient but the bed numbers are also used.

Key performance indicators to monitor clinical structures, processes and outcomes which are used as tools for continual improvement are not in place like time for initial assessment, percentage of cases (in-patients) wherein care plan with desired outcomes and nursing care plan are documented, reporting errors, re-dos, reports co-relating with clinical diagnosis, adherence to safety precautions by employees, etc. Medication errors, adverse drug reaction, medication charts with error prone abbreviations and patients receiving high-risk medications developing adverse drug event are also not monitored. No data is collected to monitor and support evaluation of these improvements.

The organisation does not identify key indicators to monitor the managerial structures, processes and outcomes. No mock drills are conducted. There is no regular monitoring of outpatient or in-patient satisfaction index. Waiting time for services including diagnostics and out-patient consultation and time taken for discharge are also not monitored. Employee satisfaction index and attrition rate and percentage of employees aware of their rights, responsibilities and welfare schemes are not monitored. Monitoring of adverse events and near misses is not done nor are incidence of blood body fluid exposures. Although the needle stick injuries are reported and actions initiated, these are not monitored. Monitoring of medical records like medical records not having discharge summary, not having codification as per International Classification of Diseases (ICD) and those having incomplete and/or improper consent and missing records is not done. Data is not collected to support further improvements and further evaluation.

There is no separate fund for quality improvement program in the budget.

The induction training does not include orientation to the organisation's vision, mission and values, awareness on employee rights and responsibilities in the organisation.

There is no established system for clinical audit and

reviews of medical records are not conducted.

## Discussion

As found in this study also, most non-accredited laboratories in India either do not have documents or are poorly prepared.<sup>12</sup> Absence of documentation of CAPA in the hospital is also not aligned with ICMR guidelines for Good Clinical Laboratory Practices which requires appropriate corrective actions for quality control data that fall outside the established tolerance limits and documentation as well.<sup>13</sup>

Recording of events and post event analysis of CPR was not carried out in the hospital. NABH standards recommends that a pre-defined procedural checklist could be used for recording and monitoring timeliness of response, availability of manpower, equipment, drugs and barriers, if any. The analysis could focus on the initiation of CPR, time of arrival of the team, availability of suitable resources, recording of the sequence of events during CPR (including technique) and the overall coordination. Monitoring of outcomes by an independent multidisciplinary committee should be done by conducting post-event analysis and undertaking appropriate corrective and preventive measures within a defined time frame. Committee includes at least one physician/cardiologist, anaesthesiologist, one member from the code blue team and nurse. During subsequent resuscitations, implementation of these measures should be noted and training be modified.<sup>11</sup> A US study established that code leaders fail to recall important CPR quality errors.<sup>14</sup> During studies in Philadelphia, it was found that CPR often does not meet basic life support guidelines, but compliance is better when feedback is provided to rescuers.<sup>15, 16</sup> Since the eye hospital under study admits only stable patients, need for CPR is a rarest event, nevertheless the standard needs prioritisation.

No pain scoring was being carried out in the hospital. Simple techniques of regular pain assessment and analgesia are effective in improvement in pain.<sup>17</sup> The Joint Commission on Accreditation of Healthcare Organizations standards also include mandatory pain assessments for all hospital patients. Several well-validated scales exist and are used successfully.<sup>18</sup> NABH standard requires documented policies and procedures that include how patients are screened, mechanism for detailed pain assessment, pain mitigation techniques and monitoring. All patients are screened for pain which is considered the fifth vital sign. It could be incorporated

as a sub-heading in initial assessment for pain. Periodic reassessment should include intensity of pain (can be done using a pain rating scale), pain character, frequency, location, duration and referral and/or radiation. Pain alleviation measures or medications should be initiated and titrated according to patient's need and response.<sup>11</sup>

The hospital formulary exists and is regularly updated but it is not readily available to the doctors. Formulary systems are maintained in many countries like United States, United Kingdom, Netherlands, etc. through a committee that meets regularly and update it.<sup>18, 19</sup> NABH standard recommends that the organisation should ensure that prescriptions are as per the formulary. Monitoring of frequency of prescriptions rejected because it contained non-formulary drugs should also be done. It could be made available in either physical or electronic form.<sup>11</sup>

The famous Institute of Medicine report titled "To err is Human" highlighted what medication errors can cost. There is no mechanism to capture near miss, medication error and adverse drug event (ADE). Study in India has revealed an incidence of medication errors at 34% and ADEs at 8.2%.<sup>20, 21</sup> As per the NABH standard, there should be a documented procedure for it that outlines the process for identifying, documenting, reporting, analysing and taking action. There should be a defined time frame for reporting and analysis (done by a multidisciplinary team).<sup>11</sup>

There is no patient safety programme in place to benefit the ultimate beneficiary of the entire system. Studies on quality improvement collaborative interventional programmes on care processes or outcomes of care have shown moderate yet positive results.<sup>22</sup> NABH standard requires that a comprehensive programme that covers all major elements related to patient safety and risk management that includes adverse events ranging from no harm to sentinel events is developed, documented, communicated (through regular training programme or printed materials), implemented and maintained by a multi-disciplinary committee. There should be a designated individual for coordinating and implementing the programme. Programme reviews should include review of facility inspection rounds and analysis of key-safety indicators. The organisation should adhere to the current national patient-safety goals or WHO patient-safety solutions.<sup>11</sup>

Managerial indicators like patient satisfaction

surveys are not routinely carried out in the hospital. Programs to determine how patients evaluate their experiences provides valuable information for implementing transformational changes in care delivery and services.<sup>23</sup> The patient perceptions determine hospital reputation, influence future patient demands and are integral to understanding health care systems.<sup>24</sup> Employee related indicators did not exist. Measuring job satisfaction among staff is essential owing to the relationship between satisfaction and job turnover and performance.<sup>25</sup>

The study found that key performance indicators to monitor clinical structures, processes and outcomes are not in place. Monitoring health care quality is impossible without their use as these create basis for quality improvement and prioritization in the system.<sup>24</sup>

Drills which were found wanting in the hospital, actually allow hospital employees to become familiar with disaster procedures, identification of problems in different components of response and provide opportunity to apply lessons learned to disaster response.<sup>26</sup>

Needle stick injuries (NSIs) are not monitored. In a study in India, it was found that recapping of needles caused 8.5% and improper disposal of sharps resulted in 18.6% of NSIs.<sup>27</sup> Monitoring of needle stick injuries, education and reporting strategies can be used to help improve practice and occupational safety for health care workers.<sup>28</sup> Monitoring of NSIs is considered a mandatory key performance indicator in the NABH standards.<sup>11</sup>

System for clinical or medical record audit did not exist in the hospital. Medical audits reassure that quality is achieved, guide priority improvement strategies and helps in clinical governance besides facilitating continuing education.<sup>29-33</sup> Other study in India found that no department conducted medical audits although majority doctors favoured it.<sup>34</sup> NABH standard requires that the organisation identifies clinicians, administrators and nurses for conducting audit. Priority patient care aspects should be identified and audit conducted on predefined parameters so that there is no bias. The parameters could be disease based, cost based, community based or based on morbidity (length of stay). It should lay down the objectives the parameters that are going to be captured, develop a checklist where required, sampling and data collection guidelines and preparation of report. The audit should encompass all aspects of clinical and nursing care.<sup>11</sup>

Budgetary control and cost-containment negatively

affect quality of care and patient satisfaction.<sup>35</sup> The study found that there was no separate fund for quality improvement program. Appropriate fund allocation should be done by the organisation for the smooth functioning of the programme. If no data is available the organisation could make a beginning by earmarking a budget but reviewing it at the end of six months to make any necessary modifications.<sup>11</sup>

## Conclusion

To summarise the hospital complies with most of the requirements of accreditation including all regulatory legal requirements. The results of the study identified the gaps that need to be fulfilled before the hospital can go for successful accreditation. The study highlighted that although the practices are evidences of compliance to accreditation standards the documentation is not as per requirements. The non-conformances are mainly related to specific requirements viz. CAPA, post event CPR analysis by multidisciplinary committee, use of pain scales, safety committee, clinical and managerial KPIs, etc. Reporting of medication errors has always eluded the domain so has in this study. Continuous quality improvement related standards can be met at an advanced stage of accreditation. As the eye hospital is one of the many in a conglomeration of hospitals of the Institute and NABH does not allow partial accreditation of a centre the activities related to accreditation has lagged behind. The study indicates that it requires specific orientation and approach to comply with relevant standards, should the hospital choose to go for accreditation, as all the gaps have been clearly identified by this study. The study delineates how the identified opportunities can be met based on interpretation of the standards. The study is limited by the fact that it assumes that the documentation requirements are met by the circulars and a resident manual which actually is not as per NABH requirements. However, these are communicated and available to all stakeholders and that is how the hospital operates. The focus of the study is patient safety and quality which has been comprehensively addressed by the accreditation standards and is therefore of immense practical implications on patient outcomes and safe environment for both patient and staff. This study results are generalisable to other hospitals as it exemplifies how each objective element of quality is evaluated and those not applicable are not scored upon after succinct explanation of standards and their intent. It goes far in explaining and creating an understanding of quality for leaders or important stakeholders in hospitals who have

not been exposed to the very basic domains of quality in their organisations. It opens avenues for future research on neglected areas such as audits and continuous quality improvements.

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