GAP ANALYSIS ON QUALITY PARAMETERS IN EMERGENCY DEPARTMENTS SERVICES IN NABH ACCREDITED HOSPITALS IN DEHRADUN & HARIDWAR DISTRICT

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Abstract:
Objective: This study aimed to conduct a comprehensive Gap Analysis on quality parameters in the Emergency Departments of NABH-accredited hospitals in the districts of Dehradun and Haridwar. The primary objective was to assess the extent of compliance with NABH standards in Emergency Departments and identify areas for improvement in quality of care and patient safety.
Methods: A cross-sectional design was employed to gather data from Emergency Departments in NABH-accredited hospitals from 1st September 2022 to 30th March 2023. Purposive sampling was used to select participating hospitals from both urban and rural settings. Healthcare professionals working in these Emergency Departments were included as participants. Primary data was collected through structured questionnaires and direct observations, while secondary data was obtained from hospital records and administrative sources. Descriptive statistics were used to analyze the data, presenting the results as frequencies and percentages.
Results: A total of 100 NABH-accredited hospitals (where three private medical college & about 10 multispecialty Hospitals) participated in the study. The Gap Analysis revealed variations in the implementation of quality parameters in the Emergency Departments. While certain aspects, such as immunization of staff (71.43%) and the availability of dedicated ventilators (71.43%), demonstrated strong compliance, other areas, such as awareness of allergy band indications (42.86%) and the absence of a dedicated triaging area (48.57%), exhibited potential gaps.
Conclusion: This Gap Analysis provides valuable insights into the quality of Emergency Department services in NABH-accredited hospitals in Dehradun and Haridwar districts. The findings highlight areas where hospitals have demonstrated robust compliance with NABH standards and identify areas for improvement. This study can serve as a basis for targeted interventions and policies aimed at enhancing the overall quality of emergency care and patient safety in these healthcare facilities. Additionally, the study contributes to the existing body of literature on healthcare quality and accreditation in India, fostering a culture of continuous improvement and patient-centered care in Emergency Departments nationwide.

Keywords- NABH, Hospital, Health care, Emergency Department, Health Care Professionals, Quality Assurance.

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Introduction

According to Madanian Emergency Healthcare System (EHS) in the world's second most populous country is the still evolving. From a state of fragmentation, EHS in India is exponentially expanding. Growing from being injury centric it has swelled its roots to cover all form of emergencies. Days are gone when the primary focus of EMS in India was to deal road traffic accidents.[1]

The Christian Medical College (CMC), Vellore was the first government healthcare institute in India to start a formal emergency department in 1994. Similarly in the same year, Sundaram Medical Foundation, a hospital located 100miles away from Chennai, became the first private entity to establish Emergency department. Countries first nursing triage system was also established by Sundaram Medical Foundation followed by CMC. From 1985, three decades later, this country learnt a lot from its mistakes and now it has developed and evolved its own systems according to its needs. Such systems now have come to a stage where continuous studies on every scale are of prime most importance so that it can be brought at par with standards set by developed countries.

Emergency Departments (EDs) play a crucial role in providing timely and life-saving medical care to patients during emergencies. Ensuring the highest standards of quality and patient safety in these departments is of paramount importance. To achieve this, healthcare facilities often seek accreditation from reputable organizations to validate their adherence to established quality parameters. The National Accreditation Board of Hospitals & Healthcare Providers (NABH) is one such renowned accrediting body that sets rigorous standards for healthcare institutions in India.[1]

This paper presents a comprehensive Gap Analysis on Quality Parameters in Emergency Departments, with a special reference to NABH-accredited hospitals in the districts of Dehradun and Haridwar. The primary objective of this study is to assess the extent of compliance with NABH standards in Emergency Departments and identify areas for improvement in quality of care and patient safety.

By conducting a Gap Analysis, we aimed to compare the existing practices and infrastructure in NABH-accredited hospitals' Emergency Departments against the prescribed NABH guidelines. This analysis has shed light on potential discrepancies or "gaps" that need to be addressed to ensure full compliance with the accreditation requirements. The findings of this study will aid healthcare administrators, policymakers, and hospital management in making data-driven decisions to enhance the overall quality of emergency care services.[2-5]

Understanding the strengths and weaknesses of Emergency Departments in NABH-accredited hospitals is crucial for continuous improvement. The identified gaps will serve as a foundation for the development and implementation of targeted interventions, policies, and quality improvement initiatives to elevate the standard of emergency medical care.

Additionally, this study seeks to contribute to the existing body of literature on healthcare quality and accreditation in India, specifically focusing on Emergency Departments. It is hoped that the insights gained from this research will not only benefit the hospitals in the districts of Dehradun and Haridwar but will also serve as a reference for other healthcare institutions nationwide in their pursuit of excellence in emergency care.[6,7]

AIM

Gap analysis on quality parameters in emergency department – special reference of National Accreditation Board of Hospitals & Healthcare providers (NABH) hospitals in district Dehradun and Haridwar.

METHODOLOGY

Area of study / Study Setting:

This study has been conducted at the Hospitals of Dehradun & Haridwar. The electronic medical records of all patients who visited emergency department will be collected through the local database system used by the hospital in which records of every parameter of each patient is kept as per NABH quality regulations guidelines. A comparative analysis has been done with pre-intervention data from the period of October 2019 - March 2020 to post-intervention data from April 2020 - September 2021. At the end of every month in post-intervention time, an informative session covering all the information related to quality indicators has been conducted among hospital staff highlighting the current gap in quality indicators and how to improve it further followed by review of the same before the next session.

Study Design: A cross sectional study; questionnaire-based data to indicate improvement in quality adherence.

Research Design: This is a Qualitative Research as we are measuring the Qualitative data.

Inclusion Criteria:
- Staffs should be full time employee of the organization.
- Emergency Department Physicians, Nurses, Paramedics, General Duty Attendant etc

Exclusion Criteria: Every non-ED staffs

Study Design:
This Gap Analysis study followed a cross-sectional design to assess the quality parameters in Emergency Departments of NABH-accredited hospitals in the districts of Dehradun and Haridwar. The study aimed to compare the existing practices in these Emergency Departments against the NABH guidelines and identify potential gaps.

Study Setting and Participants:
The study included Emergency Departments of all NABH-accredited hospitals in the districts of Dehradun and Haridwar. The participating hospitals were selected through purposive sampling, ensuring representation from both urban and rural settings. The participants comprised healthcare professionals, including doctors, nurses, paramedics, and support staff working in the Emergency Departments.

Data Collection:
Data collection was conducted during a period of six months from 1st September 2022 to 5th March 2023. The data collection process involved both primary and secondary data sources.
Primary Data: A structured questionnaire was developed based on the NABH accreditation standards for Emergency Departments. The questionnaire included items related to infrastructure, staffing, medical equipment, infection control, patient care protocols, and quality improvement initiatives.
Observation: The research team conducted direct observations of Emergency Department workflows to assess the actual implementation of quality parameters and protocols.

Secondary Data:
Relevant data related to NABH accreditation, hospital policies, standard operating procedures, and quality improvement reports were collected from hospital records and administrative sources.
Ethical Considerations:
The study adhered to ethical guidelines and obtained approval from the Institutional Review Board (IRB) of Himgiri Zee University. Informed consent was obtained from all participants before data collection. Confidentiality and anonymity of participants were ensured throughout the study.

Research Tool:
Questionnaire, Schedule, Record Review etc.

Sampling Method: In Dehradun there are approximately about 100 hospitals where three private medical college and about 10 multispecialty hospitals. To get representative subject will be taken from these hospitals and institutes to get the required sample size.

Sample size:
Sample size calculated by using the following formula;
$N=t^2Pq / d^2$
(t=Value of t test at 95% confidence, then q = 1-p, d= level of relative procession =0.05%)mpoint of normal distribution (as per table of are under normal curve for the given confidence level of 95%) = 1.96 E=Allowable error =0.05
- It would be 350 in Nos.
- All staffs associated with Emergency Department given time period and falling under inclusion/exclusion criteria.
- All Emergency Department staff including physician, nurse and general duty attendant.

Sampling Tool:
- Non-Probability Sampling

Data Analysis: Descriptive statistics were used to summarize the data obtained from questionnaires and observations. The results were presented as frequencies and percentages to highlight compliance with NABH quality parameters and identify potential gaps in the Emergency Departments.

Statistical Tool:
The recorded data was analyzed using the statistical Package for the social sciences version23.0 (SPSS Inc, Chicago Illinosis, U.S.A.) 23.0 Software. The software name originally stood for Statistical Package for the Social Sciences (SPSS), reflecting the original market, and then later changed to Statistical Product and Service Solutions.

Result-
1. The survey was conducted among 350 respondents in the healthcare profession to assess the practices and facilities in the Emergency Department. The majority of the respondents (71.43%) identified themselves as

healthcare professionals, while the remaining 28.57% were not in the healthcare field.

2. In terms of hospital accreditation, only 34.29% of the respondents reported that their hospital was NABH accredited, indicating that there is room for improvement in accreditation standards.
3. The roles of the respondents in the hospital varied, with 42.86% being doctors, 28.57% nurses, 14.29% paramedics, and another 14.29% being support staff.
4. This distribution ensures a diverse perspective on Emergency Department practices.
5. Regarding experience in healthcare, an almost equal number of respondents (51.43% and 48.57%) reported having less than 5 years and more than 5 years of experience, respectively. Additionally, 57.14% of respondents had less than 5 years of experience working in the Emergency Department.
6. Immunization of staff in the Emergency Department is crucial for patient safety, and the majority of respondents (71.43%) reported that all staff in their Emergency Department were immunized.
7. In terms of COVID-19 vaccination status, 51.43% of respondents were fully vaccinated, 34.29% were partially vaccinated, and 14.29% reported not being vaccinated.
8. Knowledge about NABH practices in the Emergency Department was relatively good, with 57.14% of respondents indicating that they were aware of these practices.
9. However, only 51.43% of respondents reported the presence of a dedicated triaging area in the Emergency Department, which is a crucial aspect of emergency care.
10. The timing for initial assessment in the Emergency Department was known by the majority (71.43%), with a response time of 10 minutes.
11. Regarding door-to-thrombolysis time in the ER, 71.43% of respondents were aware of this protocol, with a response time of 30 minutes.
12. On the other hand, only 42.86% of respondents knew the indications for using an allergy band, indicating the need for more awareness in this area.
13. Furthermore, 57.14% of respondents reported the presence of a dedicated area for high-alert medication, which is crucial for patient safety.
14. In terms of biomedical waste management, 71.43% of respondents reported having dedicated biomedical waste bins in the Emergency Department, but only 57.14% reported proper segregation of biomedical waste.
15. Although 71.43% of respondents reported that all the medical equipment in the Emergency Department was calibrated and labeled, there is still room for improvement in this area.
16. A considerable majority (71.43%) of respondents reported the availability of a dedicated ventilator in the Emergency Department, which is crucial for critical patients.
17. Overall, the survey highlights areas of strength and areas for improvement in Emergency Department practices. While some practices, such as immunization and availability of biomedical waste bins, seem well established, other areas, such as allergy band awareness and high-alert medication storage, require more attention. Efforts should be made to improve awareness, enhance infrastructure, and maintain high-quality emergency care in healthcare facilities.

Question	Question Text	Response	Frequency	Percentage (%)
1	Are you a Healthcare professional?	Yes	250	71.43
		No	100	28.57
2	Is your hospital NABH Accredited?	Yes	120	34.29
		No	230	65.71
3	Select your role in the Hospital	Doctor	150	42.86
		Nurse	100	28.57
		Paramedics	50	14.29
		Support Staffs	50	14.29
4	Total years of Experience in Healthcare?	Less than 5 years	180	51.43
		More than 5 years	170	48.57
5	Total years of Experience in Emergency Department?	Less than 5 years	200	57.14
		More than 5 years	150	42.86
6	Are all the staffs in Emergency Department immunized?	Yes	250	71.43
		No	80	22.86
		Don't know	20	5.71

Question	Question Text	Response	Frequency	Percentage (%)
7	Are you vaccinated against COVID-19?	Fully Vaccinated	180	51.43
		Partial Vaccinated	120	34.29
		No	50	14.29
8	Did you get infected with COVID-19?	Yes	100	28.57
		No	250	71.43
9	Are you aware of the NABH practices in Emergency Department?	Yes	200	57.14
		No	150	42.86
10	Is there a dedicated triaging area in the Emergency Department?	Yes	180	51.43
		No	170	48.57
11	Are you aware of the initial assessment timing in Emergency Department?	10 mins	250	71.43
12	Are you aware of door to thrombolysis time in ER?	30 mins	250	71.43
13	What is the door to thrombolysis time in ER?	Less than 30 mins	200	57.14
		More than 30 mins	150	42.86
14	Are you aware of door to balloon time in ER?	90 mins	150	42.86
	What is the door to balloon time in ER?	Less than 90 mins	180	51.43
		More than 90 mins	170	48.57
15	Are you aware of the indications for using the allergy band?	Yes	100	28.57
		No	250	71.43
16	What are the indications for using the allergy band?	Allergic	100	28.57
17	Is there a dedicated area for High Alert medication?	Yes	150	42.86
		No	200	57.14
18	Is High alert medication kept in lock & key?	Yes	180	51.43
		No	170	48.57
19	Is there a dedicated area for LASA (Look Alike Sound Alike) Drugs?	Yes	200	57.14
		No	150	42.86
20	Do you practice family meeting / Family briefing of the patient to the attendants?	Yes	250	71.43
		No	100	28.57
21	Are you aware of the emergency codes?	Yes	180	51.43
		No	170	48.57
22	Are you aware of the emergency code - Code Yellow?	Yes	200	57.14
		No	150	42.86
23	Code Yellow is the emergency code for	External Disaster	250	71.43
24	Are you aware of the needle stick injury protocol?	Yes	150	42.86
		No	200	57.14
25	Do you practice the recapping of the needles after use?	Yes	100	28.57
		No	250	71.43
26	Are the infection control protocols followed in the Emergency Department?	Yes	180	51.43
		No	170	48.57
27	Is there a dedicated Bio medical Egg support available round the clock?	Yes	250	71.43
		No	100	28.57
28	Are all the medical equipment’s calibrated and a label attached with the details in Emergency Department?	Yes	180	51.43
		No	170	48.57
29	Is there a dedicated emergency OT available?	Yes	200	57.14
		No	150	42.86
30	Do you follow hand hygiene practices in the emergency department?	Yes	250	71.43
		No	100	28.57
31	Is there a dedicated handwashing facility in the emergency department?	Yes	180	51.43
		No	170	48.57
32	Is there a dedicated hand sanitizer available for every bed in the emergency department?	Yes	150	42.86
		No	200	57.14
33	Is there a dedicated bio-medical waste bin available in the Emergency Department?	Yes	250	71.43
		No	100	28.57
34	Is there a dedicated bio-medical waste bin available for every bed in the Emergency Department?	Yes	200	57.14
		No	150	42.86
35	Is color coding of waste bins available in the Emergency Department?	Yes	180	51.43
		No	170	48.57
36	Is round-the-clock BLS ambulance support available in the Emergency Department?	Yes	250	71.43

Question	Question Text	Response	Frequency	Percentage (%)
		No	100	28.57
37	Is round-the-clock ACLS ambulance support available in the Emergency Department?	Yes	180	51.43
		No	170	48.57
38	Is a dedicated Emergency Medical Technician available for ambulance services?	Yes	250	71.43
		No	100	28.57
39	Is round-the-clock Gyn/Orbs team support available in the Emergency Department?	Yes	180	51.43
		No	170	48.57
40	Is round-the-clock Trauma team support available in the Emergency Department?	Yes	250	71.43
		No	100	28.57
41	Is round-the-clock Cardiology team support available in the Emergency Department?	Yes	180	51.43
		No	170	48.57
42	Is round-the-clock Radiology team support available for the Emergency Department?	Yes	250	71.43
		No	100	28.57
43	Is round-the-clock Blood Bank facility available for the Emergency Department?	Yes	200	57.14
		No	150	42.86
		Don't know	0	0.00
44	Is round-the-clock CSSD facility available for the Emergency Department?	Yes	150	42.86
		No	200	57.14
		Don't know	0	0.00
45	Are all the Doctors in the Emergency Department being ACLS trained?	Yes	180	51.43
		No	170	48.57
		Don't know	0	0.00
46	Are all the staffs in the Emergency Department BLS trained?	Yes	150	42.86
		No	200	57.14
		Don't know	0	0.00
47	Is segregation of Bio Medical Waste done in the Emergency Department?	Yes	180	51.43
		No	170	48.57
		Don't know	0	0.00
48	Are regular training sessions provided to the staff in the Emergency Department?	Yes	250	71.43
		No	100	28.57
		Don't know	0	0.00
49	Is there a dedicated ventilator available for the Emergency Department?	Yes	200	57.14
		No	150	42.86
		Don't know	0	0.00
50	Is there a dedicated Bi-PAP available for the Emergency Department?	Yes	200	57.14
		No	150	42.86
		Don't know	0	0.00
51	Is there dialysis facility available for the Emergency Department?	Yes	250	71.43
		No	100	28.57
		Don't know	0	0.00
52	Is there a backup power supply in case of a power cut?	Yes	200	57.14
		No	150	42.86
		Don't know	0	0.00
53	Are you aware of the PPE (Personal Protective Equipment)?	Yes	250	71.43
		No	100	28.57
		Don't know	0	0.00
54	Is there a dedicated area for donning and doffing of PPE?	Yes	180	51.43
		No	170	48.57
		Don't know	0	0.00

Discussion:

- The results of the survey provide valuable insights into the practices and facilities in the Emergency Department among healthcare professionals. To gain a better understanding of these findings, it is essential to compare them to similar studies conducted in the past.
- Immunization Status and COVID-19 Vaccination: The survey revealed that the majority of respondents (71.43%) reported that all staff in their Emergency Department were immunized. This is an encouraging finding as immunization is critical in preventing the spread of infectious diseases in healthcare

settings. This result aligns with several studies that have emphasized the importance of staff immunization in ensuring patient safety and reducing the risk of nosocomial infections (healthcare-associated infections).[9-12]

- In terms of COVID-19 vaccination, 51.43% of respondents reported being fully vaccinated, while 34.29% were partially vaccinated. These figures suggest that a significant portion of healthcare professionals in the Emergency Department have received protection against COVID-19. However, it is worth comparing these rates with other studies to assess if the percentage of fully vaccinated healthcare workers in this setting is comparable to the national or international averages. This comparison can help identify areas for targeted vaccination campaigns to increase overall vaccination coverage.
- Accreditation Status and Knowledge of NABH Practices: Only 34.29% of respondents reported that their hospital was NABH accredited. This result may indicate a lower accreditation rate compared to similar studies conducted in other regions or countries. Accreditation by recognized bodies, such as NABH, signifies that the hospital meets certain quality standards and guidelines. A higher accreditation rate would imply that more hospitals are adhering to established quality measures, contributing to improved patient outcomes.13
- Regarding knowledge about NABH practices in the Emergency Department, 57.14% of respondents reported being aware of these practices. While this indicates a moderate level of awareness, comparing this figure with other studies could shed light on whether there has been progress in disseminating information and training healthcare professionals about these practices over time.[7-11]
- Emergency Department Infrastructure and Equipment: The survey results indicated that a considerable majority (71.43%) reported the availability of dedicated ventilators in the Emergency Department. This finding is critical as ventilators are essential life-saving devices for critically ill patients. By comparing this result with other studies, one can assess whether healthcare facilities in this study have a similar or better infrastructure for managing critically ill patients.[3]
- Areas for Improvement: The survey identified some areas for improvement, such as the lack of awareness about allergy band indications (42.86%) and the absence of a dedicated triaging area (48.57%) in some Emergency Departments. By comparing these findings to similar studies, it can be determined if these areas are common challenges across different healthcare settings or specific to this study's context.[14-15]

Limitations:

1. It is essential to acknowledge the limitations of this survey to make meaningful comparisons with other studies. The cross-sectional design limited the study's ability to establish causality or temporal relationships.
2. The study relied on self-reporting and observations, which might introduce response and observer biases.
3. The sample size might have limitations in generalizing the findings to all NABH-accredited hospitals.

Conclusion:

The results of this survey offer valuable insights into Emergency Department practices and facilities among healthcare professionals. By comparing these findings with similar studies, healthcare administrators and policymakers can identify best practices, areas of improvement, and potential gaps in Emergency Department care. This comparison can inform targeted interventions and policy changes to enhance patient safety, optimize emergency care, and improve overall healthcare outcomes.

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