HEALTH CARE QUALITY ASSURANCE: EMERGENCY DEPARTMENT OF A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Measuring healthcare quality and improving patient satisfaction have become increasingly prevalent, especially among healthcare providers and purchasers of healthcare. The aim of this study was; to evaluate the various aspects of quality assurance in Emergency Department, to evaluate patient satisfaction with emergency care, and to determine associated factors with patient satisfaction.

Methods: Factors influencing healthcare professionals & patients perception regarding Quality Assurance in E.D. were identified using questionnaire survey in B.P.S. Medical College & Hospitals of the Sonipat district, Haryana.

Results: A total of 80 patients & 20 healthcare professionals were enrolled. The most patient-reported problems were about physical facilities. Variables associated with greater satisfaction with ED care were physical facilities as 21% of patients were dissatisfied and 23.3% were of no opinion. 20% Healthcare professionals rated physical facilities to be insufficient and 16 % were of no opinion. The highest level of quality was integrated in documentation procedures. 83% of patients were satisfied with the overall quality of E.D. while 83% of healthcare professionals rated that quality is incorporated in overall functioning of Emergency Department

Conclusion: The research project highlighted the perception about the quality factors as perceived by patients and their attendants. The patients who were admitted through the
emergency department seemed to be satisfied. Patient’s perception about quality factors seemed to be positive. Doctors/nurses expressed their opinion of dissatisfaction about the tangible factors which include drinking water facilities for patients/staff but doctor/nurses seem to be satisfied with overall quality of the department’s services.

**Keywords:** Emergency Care, Emergency Department Quality Study, Satisfaction.

**BACKGROUND**

Emergency Department is very important department in every hospital. It is a very critical and sensitive unit of any hospital and is involved in the management of emergency cares. It is a department where patients comes in critical situation and requires urgent and high quality medical care. In Emergency Department, excellent services must be provided to the patients as the patients and their relatives are under emotional strain and are worried about the consequences of the disease or calamity that has come up suddenly. A patient needs services and sympathy; hence science and humanity act in close co-operation.

Emergency medical care is progressively acquiring multifaceted dimensions. It has varied components like pre-hospital care, ambulance services and trauma centres and it has to encounter medical, surgical emergencies of diverse forms.

The emergency department process is critical for any hospital. Short waiting times and a positive experience represent important drivers of patient satisfaction. Since emergency department (ED) is frequently a patient’s first experience with hospital, improving the quality is of paramount of both customer satisfaction & hospital’s bottom line. Emergency Department makes the first impression on the patient, and relatives and friends who come along with the patient as it is the place where serious patients have their first interaction.

Efficient and effective organization and management of Emergency Medical Services in a health care institution is needed if the institution had to deliver quality emergency medical care to the patients. Demand for quality health care services has increase manifold so it is important to find out the various aspects involved in delivering quality healthcare. Measuring healthcare quality and improving patients’ satisfaction have become increasingly prevalent, especially among healthcare providers and purchasers of healthcare, because consumers become more knowledgeable about healthcare. Health care in developing countries including India has not traditionally focused on emergency medical care.

To provide quality services, evaluation must be done in all parameters of Emergency Medical Services. As quality assurance is a never ending process Quality has to be totally incorporated in every function of Emergency Department of the organization as there is clear cause-and-effect relationship between actions and their results. Quality assurance is based on patient satisfaction at a remarkable cost. And, in this age of severe competition, quality assurance is the only way by which desired success can be achieved.

The problem was undertaken here with view to find out the various aspects of quality healthcare and patient satisfaction in emergency department of Bhagat Phool Singh Medical College for Woman Khanpur Kalan, Sonepat.

**REVIEW OF LITERATURE**

Emerg Trauma Shock concluded that Seriously injured patients lose valuable pre hospital time because there is no direction regarding destination and inter facility transfer, a lack of seamless transport, and no concept of initial trauma care. The lack of direction is compounded in geographical areas that are situated at the border of political jurisdictions.

(2013) [2] Nada Damghi, Jihane Belayachi, Bouchra Armel, Aicha Zekraoui, Naoufel Madani, Khalid Abidi, Abdellatif Belabes Benchekroun, Amine Ali Zeggwagh and Redouane Abouqal in a research study titled “Patient satisfaction in a Moroccan emergency department” concluded that measuring healthcare quality and improving patients’ satisfaction have become increasingly prevalent, especially among healthcare providers and purchasers of healthcare, because consumers becomes more knowledgeable about healthcare & it was concluded that Medical staff needs to consider different interactions between those predictive factors in order to develop some supportive tools.

(2013) [3] P Daniel Patterson, Anthony J Pfeiffer and Judith R Lave in a study “Network analysis of team communication in a busy emergency department” identified wide variation in the magnitude of communication cohesion (density) and concentration of communication between clinicians (centralization) by day/night shift and over time and revealed impact of poor communication in emergency department. Poor communication between health care teammates is a key factor in medical error. Social Network Analysis (SNA) measurement techniques revealed that frequency of communication as a measure of interdependencies between ED clinicians varies by day/night shift and over time. Communication between nurses, physicians, and other ED clinicians is complex and difficult to track. A clear understanding of communications in the ED is lacking, which has a potentially negative impact on the design and effectiveness of interventions to improve communications.

(2012) [4] James Anish F., Jose Maya in a study titled “An academic emergency department: residents’ perspective” found the benefits of proactive decisions that could further enhance the efficiency of emergency department. But such decisions did not always result in positive responses and improved morale. When such decisions were retracted as it causes misalignment with the existing system. An academic emergency department was expected and physicians should enrich their knowledge about emergency medicine. The problems faced by emergency department might be similar but the way in which one tackles the situation would be different. Decision making in this hospital may not be the best but it would've been the optimum one given the conditions available.

(2011) [5] Hassan Soleimanpour, Changiz Gholipour, and Maryam Soleimanpour conducted a study “Emergency department patient satisfaction survey in Imam Reza Hospital, Tabriz, Iran”. In this study it was find out that in order to provide optimal ED services and win patients' satisfaction, research-based interventions are needed in areas such as clinical care processes, nursing services, staff behaviour and treatment of patients, physical environment and waiting time. To make these improvements, institutionalizing quality management in health services is a must, and using its feedback in a systematic way can enhance efficiency and patient satisfaction with the ED.

(2011) [6] Aacharya Ramesh P, Chris Gastmans and Yvonne Denier in a study “Emergency department triage: an ethical analysis” explained that triage system is implemented to improve the emergency care and to prioritize cases in terms of clinical urgency. Emergency departments across the globe follow a triage system in order to cope with overcrowding. In this article an ethical analysis of "routine" emergency department triage is provided. Results from the analysis using four principles of biomedical ethics (The four principles of biomedical ethics - viz. respect for autonomy, beneficence, non-malfeasance and justice) were integrated with the care ethics perspective on triage and an
integrated clinically and ethically based framework of emergency department triage planning was proposed.

(2010) [7] B. Vasanthi, Robert James Douglas, Andrew J. A. Giles, and G. Anand Kumar conducted a study titled “Improving trauma care in India: a recommendation for the implementation of ATLS training for emergency department medical officers”. Trauma is major cause of morbidity and mortality in India. The Advanced Trauma Life Support (ATLS) programme teaches a standardised method for the initial assessment and management of trauma patients, and has been adopted by more than 50 countries worldwide. In this study significant differences were found in the theoretical knowledge of ED MOs from Salem compared with colleagues in Adelaide. This study recommended that such programmes be integrated into the training of Indian ED MOs and suggest that ATLS should be viewed as an integral part of medical training.

(2010) [8] Imron Subhan and Jain Anunaya in a study titled “Emergency care in India: the building blocks” conclude that a first step toward laying the foundation for quality emergency care in the country, would start with evaluating the existing emergency departments in hospitals across the country for emergency, and disaster preparedness to measure what existing capacity we have at hand. The next step would involve outlining existing levels of emergency care capacity based on the infrastructure of the department and the hospital at large to classify them into the following:

- Primary emergency care: Uncomplicated injuries, normal deliveries, snake/animal bites.
- Secondary emergency care: Nonvascular and orthopedic trauma, complicated deliveries and Neonatal Intensive Care Unit (NICU), poisoning cases, and thrombolytic treatment for cardiac/stroke emergencies, uncomplicated burns.
- Tertiary care: All levels of trauma, neurological/cardiac emergencies, complicated burns.

(2009) [9] Kumar Sandeep, Chaudhary Sushant, Kumar Akshay, Agarwal Arpit Kumar & M. C. Misra in a study titled “Trauma care – a participant observer study of trauma centers at Delhi, Lucknow and Mumbai” concluded that Integration of medical, non traumatic surgical and paediatric emergency along with pre-hospital care is recommended. Mostly general and orthopaedic surgeons with their resident staff were managing the facilities. Comprehensively trained accident and emergency (A and E) personnel were not available at any of the centres. Comprehensively trained senior A and E personnel as first responders were unavailable.

(2008) [10] Kumar Sandeep, Agarwal Arpit Kumar, Akshay Kumar, G. G. Agrawal, Chaudhary Sushant, Dwivedi Varsha conducted a study titled “A study of knowledge, attitude and practice of hospital consultants, resident doctors and private practitioners with regard to pre-hospital and emergency care in Lucknow” which was published in Indian Journal of Surgery. The results of the study in this town are applicable to most developed cities in India. Lack of adequate knowledge and practices in emergency medical system (EMS) at Lucknow represent a dismal situation and require continuing medical education in this area.

(2008) [11] Gupta A, Peckler B, Schoken D conducted a study with title “Introduction of hi-fidelity simulation techniques as an ideal teaching tool for upcoming emergency medicine and trauma residency programs in India”). In this study they found that there has been a move towards making emergency medicine a trainable specialty under the National Board of Examination (NBE).
(2007) [12] Ramanujam P, Aschkenasy M. In study titled “Identifying the need for pre-hospital and emergency care in the developing world: a case study in Chennai, India” find out that EMS system in India is best described as ‘fragmented.’ The basic fundamental principal behind EMS systems worldwide is to have a common emergency communication number connected to responsive agencies. Although India has the emergency number 102 for calling ambulances, the responsiveness of the system has always been doubted. In 2007, Ramanujam et al. reported that nearly 50% of trauma victims admitted to a premier hospital in an urban Indian city had received no pre-hospital care

(2004) [13] F Subash, F Dunn, B McNicholl, J Marlow in a study “Team triage improves emergency department efficiency” proved that Doctor-nurse triage teams are an effective way of shortening waiting times. Patients are treated and assessed by experienced medical and nursing staff, whatever the urgency of the condition. There was a significant increase in the number of patients seen and discharged within 20 minutes. Waiting times at midday are shorter as a result.

(2002) [14] Razzak Junaid A. & Arthur L. Kellermann in a study titled “Emergency medical care in developing countries: is it worthwhile?” explain that the purpose of emergency medical care is to stabilize patients who have life threatening or limb threatening injury or illness. It includes two major components; medical decision-making, and the actions necessary to prevent needless death or disability because of time-critical health problems, irrespective of the patient’s age, gender, location and condition. A basic but effective level of emergency medical care responds to perceived and actual community needs and improves the health of the population

METHODOLOGY

Study Design
The present research study is based in the Emergency Department of B.P.S. Medical College & Hospital Khanpur Kalan, Sonipat Haryana. The researcher has taken 100 samples of respondents which include 20 Doctors/Nurses & 80 Patients/Attendants of Patient which is selected at randomly.

Data Collection
For present study, primary data are collected by personal interviews, observation and 2 set of questionnaires, one to be filled up by Health Care Professionals & second to be filled by Patients/Attendants. A number of questions pertaining to the different aspects of Quality Medical Care in Emergency Department are framed and these questions are in proper sequence. Most of the questions are of multiple choices and close ended type and filled by using survey method.

OBJECTIVES OF THE STUDY

1) To study the existing System, Procedures, Infrastructure & Physical Layout of the emergency department.
2) To assess the attitude & perception of healthcare Providers towards health care quality assurance in emergency department of B.P.S. Medical College & Hospital Khanpur Kalan,
3) To evaluate the patient’s satisfaction level regarding quality of healthcare provided in emergency department of B.P.S. Medical College & Hospital Khanpur Kalan, Sonipat.
4) To study the gap regarding quality indicators in emergency department.
DATA ANALYSIS & INTERPRETATION

<table>
<thead>
<tr>
<th>SR. NO.</th>
<th>FACTORS</th>
<th>S.D.</th>
<th>D.</th>
<th>N.O.</th>
<th>A.</th>
<th>S.A.</th>
<th>Mean</th>
<th>S.D.</th>
<th>C.V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QUALITY IN PHYSICAL LAYOUT &amp; INFRASTRUCTURE OF E.D.</td>
<td>0</td>
<td>9%</td>
<td>0</td>
<td>37%</td>
<td>44%</td>
<td>4.26</td>
<td>0.86</td>
<td>20.19%</td>
</tr>
<tr>
<td>2</td>
<td>ADEQUACY OF PHYSICAL FACILITIES PROVIDED FOR PUBLIC &amp; STAFF IN THE E.D.</td>
<td>0</td>
<td>20%</td>
<td>16%</td>
<td>51%</td>
<td>13%</td>
<td>3.562</td>
<td>0.95</td>
<td>26.72</td>
</tr>
<tr>
<td>3</td>
<td>ADEQUACY OF SUPPORTIVE SERVICES IN</td>
<td>0</td>
<td>6%</td>
<td>32%</td>
<td>50%</td>
<td>12%</td>
<td>3.678</td>
<td>0.77</td>
<td>20.93</td>
</tr>
<tr>
<td>4</td>
<td>ADEQUACY OF TREATMENT FACILITIES IN E.D.</td>
<td>0</td>
<td>0</td>
<td>8%</td>
<td>38%</td>
<td>54%</td>
<td>4.45</td>
<td>0.64</td>
<td>14.38</td>
</tr>
<tr>
<td>5</td>
<td>SUFFICIENCY OF SUPPORTIVE FACILITIES FOR TREATMENT IN E.D.</td>
<td>0</td>
<td>0</td>
<td>20%</td>
<td>61%</td>
<td>19%</td>
<td>3.99</td>
<td>0.62</td>
<td>15.73</td>
</tr>
<tr>
<td>6</td>
<td>QUALITY INCORPORATED IN STAFFING PATTERN AND TEAM WORK IN E.D.</td>
<td>0</td>
<td>1.5%</td>
<td>1.5%</td>
<td>72%</td>
<td>25%</td>
<td>4.2</td>
<td>0.546</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>WELL DEFINED DOCUMENTATION POLICY FOLLOWED IN E.D.</td>
<td>0</td>
<td>6%</td>
<td>20%</td>
<td>31%</td>
<td>43%</td>
<td>4.32</td>
<td>0.8</td>
<td>18.528</td>
</tr>
<tr>
<td>8</td>
<td>APPROPRIATENESS OF DOCUMENTS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>45%</td>
<td>55%</td>
<td>4.59</td>
<td>0.49</td>
<td>10.73</td>
</tr>
<tr>
<td>9</td>
<td>POLICIES AND PROCEDURES ACCORDING TO QUALITY ASSURANCE</td>
<td>0</td>
<td>0</td>
<td>10%</td>
<td>59%</td>
<td>31%</td>
<td>4.21</td>
<td>0.60</td>
<td>14.46</td>
</tr>
<tr>
<td>10</td>
<td>QUALITY INCORPORATED IN ALL AREAS OF E.D.</td>
<td>0</td>
<td>0</td>
<td>17%</td>
<td>75%</td>
<td>8%</td>
<td>3.91</td>
<td>0.49</td>
<td>12.51</td>
</tr>
</tbody>
</table>


When the physical layout and infrastructure of the E.D. was assessed, it was concluded that Mean satisfaction of respondents was 4.26 ± 0.86012 with coefficient of variation 20.19 which shows variations in areas like E.D. directorial signs & accessibility to pedestrian.
Mean satisfaction of respondents towards physical facilities provided for public & staff in the emergency department was 3.562 ± 0.952 with coefficient of variation 26.726 which shows variation in response towards area like drinking water and toilet facilities both for patient and staff.

The study also reveals that 12% of the respondent doctors and nurses strongly agree & 50% of them responded in agree that the supportive facilities provided in E.D. are good. 32% said acceptable with overall mean satisfaction 3.678 ± 0.77 with coefficient of variation 20.93 showing that there is scope for improvement.

The study points out that 54% of the respondent doctors and nurses have found the treatment facilities to be adequate, and 38% rate it as fair, whereas 8% of the respondents found the treatment facilities to be acceptable with mean satisfaction 4.45 ± 0.64 & coefficient of variation 14.382 which shows that there is very less variation in response of doctors and nurses towards treatment facilities.

From the study, it was also found that 19% of the respondent doctors and nurses found the supportive facilities for treatment provided in the E.D. to be adequate, whereas 61% rated it as fair and 20% have rated it as acceptable. Mean satisfaction of respondents towards supportive facilities for treatment in emergency department was 3.99 ± 0.62 with coefficient of variation 15.73 which shows some of the areas can be improved like availability of all life saving medicines.

25% of the respondent doctors and nurses strongly agreed with the point that the E.D. was manned by sufficient staff strength, while 72% agreed with the staffing pattern and teamwork in E.D. Minority of the respondents (1.5%) has no opinion and 1.5% was disagreeing with the staffing pattern & Mean satisfaction was 4.2 ± 0.546 with coefficient of variation 13 which shows deviation in response of doctors and nurses in part of relationship with other department.

About 43% of the respondents were of the strong opinion that the general guidelines regarding documentation issued by the Honourable Supreme Court of India was followed. 31% of the respondents agreed. 20% of the respondents have no opinion with overall mean 4.32 ± 0.8 with coefficient of variation 18.628 which shows documentation procedure are well defined and followed.

The present study indicated that 55% of the doctors and nurses strongly agreed that the documents prepared/maintained in the E.D. are appropriate. 45% of the respondents agreed that all the appropriate forms were filled to avoid any omission of findings. Mean opinion of respondents towards appropriateness of documents in was 4.592 ± 0.493 with coefficient of variation 10.760 which shows that documents are maintained appropriately.

31% of the respondent doctors and nurses strongly agreed that there were precise policies concerning admission, discharge and E.D. transfer. 59% of the respondents answered as agree and 10% of the respondents were of no opinion. Mean opinion of respondents was 4.21 ± 0.609 with coefficient of variation 14.46 which reflects that policies and procedures are well defined.

Mean satisfaction of respondents towards overall quality of emergency department was 3.916 ± 0.49 with coefficient of variation 12.512 which shows variations in response of doctors and nurse that quality is not incorporated in every component of emergency department.
The present study reveals that 13.43% of the respondent patients rated physical facilities in E.D. to be very good and 41.8% of respondents said it is good. So the present study reveals that there is possibility for improvement. The present study also reveals that 75% of the respondent patients were satisfied with registration time and time by physician attended to them within 10 minutes.

Mean satisfaction of patients/attendants towards the waiting time in E.D. was 4.18 ± 0.71 with coefficient of variation 19.95 which shows that there is very less deviation.
In the sample of patients, it was observed that 22.9% of patients strongly agree that they were given good care and their problem was listened to tentatively by Doctors/Nurses in E.D.; while 53.33% of the respondent patients agree with overall mean satisfaction 3.73 + 1.126 with coefficient of variation 30.14 which shows variations in response.

18.25% of the respondents strongly opined while 59.25% of the respondents were happy and agree that that doctor attend patient’s immediate need and emergency department personnel are well qualified and show courtesy towards friends and relatives and 3.5% respondents have no opinion. But some of the patients (16.5 %%) were unhappy, Mean satisfaction of respondents towards quality personnel in the emergency department was 3.79 ± 0.974 with coefficient of variation 25.69.

18.44% of the respondents strongly felt that the E.D. is backed by quality diagnostic facilities & offers convenient access to the diagnostic service departments and, whereas 56.8% agree with good quality of the diagnostic facilities whereas 14.3% do not have any opinion. But 11% of respondents were dissatisfied with Mean satisfaction of respondents towards the convenience and quality of diagnostic services is 3.825 ± 0.871 with coefficient of variation 25.69.

When the quality of care was assessed from the patient’s point of view, it was observed that 32.9% of the respondents strongly agree that the E.D. rendered overall quality services. 49.2%% of the respondents agree while 8.33% of sample population does not have any opinion. Some of the sample patients (10%) approx. were dissatisfied with the overall quality of the department’s services. Mean satisfaction of respondents towards perception about quality of care in emergency department was 4.03 ± 0.93 with coefficient of variation 23.07692 which shows variations in response of patients and attendants showing that there is scope for improvement in quality of care in E.D.

CONCLUSION

Human satisfaction is a complex concept that is related to a number of factors including life style, past experience, future expectations and the values of both individual and society. If healthcare providers understand what attributes consumers use to judge healthcare quality, steps may be taken to monitor and enhance the performance on those attributes.

The emergency department is a process rich environment. Success requires careful sequential co-ordination of these processes. Every process provides information by which that process can be improved. Precise performance measurement is required to establish baselines, identify potential opportunities for improvement and to determine whether performance has improved.

The first objective to study and assess the appropriateness of documentation in the emergency department revealed that documentation in the emergency department was appropriate and most of the registers as recommended by the Supreme Court of India were maintained in the Emergency department.

The research project highlights the perception about the quality factors as supposed by patients and their attendants. The patients who were admitted through the emergency department seemed to be satisfied.

The study also highlights perception about the quality factors as perceived by the doctors/nurses. Doctors/nurses expressed their satisfaction about the treatment facilities, documentation procedure and policies for emergency department. Doctors/nurses also expressed their opinion of dissatisfaction about the tangible factors which include drinking water facilities for patients/staff and doctor/nurses seem to be satisfied with overall quality of the department’s services.
RECOMMENDATION

On the basis of result and analysis of the study, it is recommended that some changes be considered in order to improve the quality of service rendered by Emergency Department.

- The physical layout and design of the emergency department is found to be satisfactory but there is scope for improvement in certain areas like the drinking water facilities and toilet facilities.
- There is scope for improvement in continuous monitoring of staff performance to evaluate the quality of care provided.
- Patient expect medical problem to be explained to them, in simple language by the doctors/nurses in the E.D.
- Stretcher bearers/ward boys are found to be just adequate and it can be further improved although the emergency department is manned by sufficient staff strength to carry out the routine activities.
- Tangible factors which include physical facilities play an important role in perception of patients and healthcare professionals towards overall quality in the department’s services.
- There is scope for improvement in provisions of Inter-relationship of Emergency Department with other department.
- To impart the entire setting of hospital with a culture of learning and practicing.

REFERENCES

3. Patterson P Daniel, Anthony J Pfeiffer and Judith R Lave “Network analysis of team communication in a busy emergency department” http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3637459/


