Quest Journals
Journal of Medical and Dental Science Research
Volume 8~ Issue 3 (2021) pp: 43-48
ISSN(Online) : 2394-076X ISSN (Print):2394-0751
www.questjournals.org

Research Paper

To Study the Factors Associated with Inappropriate Hospital Stay in the Emergency Medicine Department of a Tertiary Care Teaching Hospital of India.

Mohd Anwar ul Khaliq[1], Ghulam Hassan Yatoo[2], Showket Mufti[3], Usma Jabeen, MD[4], Asifa Malik[5], Muhammad Israr ul Khaliq, MDS[6]

[1]*Department of Hospital Administration, All India Institute of medical Sciences, New Delhi*
[2]*Department of Hospital Administration, SKIMS, Srinagar*
[3]*Department of Emergency Medicine, SKIMS, Srinagar*
[4]*Consultant Anesthesiologist and Critical Care Physician*
[5]*Blood Transfusion Physician*
[6]*Consultant Dental Surgeon*
Corresponding Author: Mohd Anwar ul Khaliq, Department of Hospital Administration, All India Institute of medical Sciences, New Delhi

ABSTRACT
Inappropriate hospital stay increases hospital costs, decrease available resources for patients with critical situation and put patients at risk of nosocomial infections.
The study found that most important reason for inappropriate hospital stay was delay in interdepartmental calls/shifting both in Medical (38.6%) and Surgical Emergencies (24.16%). Waiting for investigations (18.2% in Medical Emergency and 21.6% in Surgical Emergency) was also a significant factor leading to inappropriate hospital stay.
Key words: Emergency Department, Utilization, inappropriate hospital stay

Received 01 Mar, 2021; Revised: 12 Mar, 2021; Accepted 14 Mar
P*ublished with open access at www.questjournals.org*

I. INTRODUCTION

Health care is one of the basic needs of each community. Since considering to healthcare and investing in this sector increases labor productivity and service production, therefore, optimal resource allocation and use of resources is very important.(1)

Evaluation of health care programs can determine their quality and progress of implementation and failure or success rate (2). Hospital services absorb almost half of health sector costs, so efficiency promotion of these services through cost reduction and use of potential capacity of health care organizations is necessary (3).

Diverse economic incentives have been used for cost reduction in hospitals. However, in the field of patient access to hospital services and the quality of services have not yielded to positive results. For preserving quality and accessibility, it is necessary to focus on cost containment indexes by attention to the appropriateness or inappropriateness of health care services (4). Some cost containment strategies such as reduction in hospital beds have increased hospital waiting time. To overcome this problem, we should use hospital beds at highest efficiency and the best way for efficient use of hospital beds is to avoid or to minimize inappropriate patient hospitalization and not to decrease the quality (5).

Inappropriate admission and hospitalization are one of the challenges in health sector even in developed countries. Inappropriate admission is an issue that developing countries ignore its importance and do not have any information about its severity and depth, hence, the present study was aimed to investigate inappropriate hospitalization in medical and surgical division of emergency department of Sher-I-Kashmir Institute of Medical Sciences Soura, Srinagar**.**

Aims and Objectives
To Study the Factors Associated with Inappropriate Hospital Stay in the Emergency Medicine Department of a Tertiary Care Teaching Hospital**.**

II. MATERIAL AND METHODS

Study Setting
The study was conducted in the Medical and Surgical divisions of Emergency Medicine Department of Sher-I-Kashmir Institute of Medical Sciences, Srinagar. SKIMS is 1200 bedded teaching Hospital.

Study Design
A prospective observational study for a period of six months was carried out in both Surgical and Medical divisions of Emergency Medicine Department of SKIMS.

Study Duration
The study was conducted from Ist November 2018 to 30th April 2019.

Sampling
Using simple random sampling, 20 percent of the total admissions (10,000) in Emergency Medicine Department were studied.

Study tool
Modified European Appropriateness Evaluation protocol was used as a study tool (Annexure I & II).
Initially, a pilot study was carried out for a period of one month to validate the research tool and modify it according to the local needs.

EAEP is a diagnosis independent criterion based instrument consisting of admission criteria and day of care or hospital stay criteria. AEP and its modified versions have been used internationally. The tool is designed specifically for emergency patients. The validity and reliability of the AEP has been tested extensively.
During the study period, appropriateness of stay of all patients was analyzed and assessed by AEP. Their hospital stay was evaluated according to Modified EAEP criteria.

Statistical Analysis
The data was entered in MS excel. Descriptive analysis was done to calculate proportions.

III. RESULTS AND OBSERVATIONS

A prospective observational study was carried out for a period of six months and the reasons for inappropriate hospital stay were examined in both Medical and Surgical Emergency.

A. Reasons for inappropriate stay in Medical Emergency
To study reasons for inappropriate hospital stay, Out of the total (1420) cases studied, 345 had inappropriate stay.

Reasons for inappropriate stay	Frequency	Percentage
Physician responsibility	147	42.7%
Hospital responsibility	89	25.7%
Patient condition factors	40	11.6%
Environmental factors	69	20.0%
Total	345	100.00%

Table 1: Reasons for inappropriate stay in Medical Emergency

Physician's Responsibility. Inappropriate hospital stay was 42.7% (n=147) of total cases. Among physician responsibility, 90.5% (n=133) had interdepartmental calls/shifting /report awaiting as a reason for inappropriate stay and 9.5% (n=14) had physician delay discharge as a reason for inappropriate hospital stay (Table 2)

Physician's responsibility		
Reason for delay	**Frequency**	**Percentage**
1.Interdepartmental calls/Shifting /Report awaiting	**133**	**90.5%**
2. Physician delay discharge –Watch for few more days	**14**	**9.5%**
Total	**147**	**100%**

Table 2: Showing distribution of reasons for inappropriate hospital stay due to physician responsibility in Medical Emergency.

Hospital Responsibility. Inappropriate hospital stay was 25.6% (n=89) of total cases. Among Hospital responsibility, 70.7 % (n=63) cases had waiting for specialized investigations and 29.3% (n=26) had waiting for baseline investigations as a reason for inappropriate hospital stay (Table 3).

Hospital responsibility		
Reason for delay	**Frequency**	**Percentage**
1. Being Investigated (baseline investigations e.g CBC, KFT, LFT, ECG, X ray etc)	**26**	**29.3%**
2. Waiting for investigations (specialized investigations e.g MRI, PET scan, Bone scan etc)	**63**	**70.7%**
Total	**89**	**100%**

Table 3: Showing distribution of reasons for inappropriate hospital stay due to hospital responsibility in Medical Emergency.

Patient condition factors were responsible for inappropriate hospital stay in 11.6% (n=40) of total cases. Among patient condition factors, 52.5% (n=21) cases had: Discharged-Unwilling to go home as a reason for inappropriate stay (Table 4)

Patient condition factors		
Reason for delay	**Frequency**	**Percentage**
Discharged — Unwilling to Go Home	**21**	**52.5%**
Discharged — Relatives Absent	**3**	**7.5%**
Discharged -- Bill Not Paid	**5**	**12.5%**
Unwilling to Leave Till All Tests Completed	**11**	**27.5%**
Total	**40**	**100%**

Table 4: Showing distribution of reasons for inappropriate hospital stay due to patient condition factors in Medical Emergency**.**

Environmental factors were responsible for the inappropriate hospital stay in 20.00% (n=69) of total cases. Among environmental factors, 36.3% (n=25) of the cases had: unable to follow up due to financial reasons as reason for inappropriate hospital stay (Table 5).

Environmental factors		
Reason for delay	**Frequency**	**Percentage**
Patient Unable to follow up- financial reasons	**25**	**36.3%**
Patient Cannot Afford referral to higher Centre	**3**	**4.3%**
Undergoing Physiotherapy /rehabilitation	**17**	**24.6%**
Symptoms Not Fully Relieved, But Can Be Outpatient	**24**	**34.8%**
Total	**69**	**100%**

Table 5: Showing distribution of reasons for inappropriate hospital stay due to patient condition factors in Medical Emergency.

B. Reasons for inappropriate stay in Surgical Emergency

To study reasons for inappropriate stay, Out of the total (580) cases studied, 240 had inappropriate stay (Table 8).

Reasons for inappropriate stay	**Frequency**	**Percentage**
Surgeon's responsibility	102	42.5%
Hospital responsibility	60	25.0%
Patient condition factors	40	16.6%
Environmental factors	38	15.9%
Total	240	100.00%

Table 6: Reasons for inappropriate stay in Surgical Emergency

Surgeon's Responsibility. Inappropriate hospital stay was 42.5% (n=102) of total cases. Among surgeon responsibility, 56.9% (n=58) had: interdepartmental calls/shifting/report awaiting as a reason for inappropriate stay, followed by 33.3% (n=34) had: Waiting for next day surgery as a reason for inappropriate stay (Table 6).

Surgeon's responsibility		
Reason for delay	**Frequency**	**Percentage**
1.Interdepartmental calls/ Shifting /report awaiting	**58**	**56.9%**
2. Surgeon delay discharge –Watch for few more days	**10**	**9.8%**
3.Waiting for next day surgery	**34**	**33.3%**
Total	**102**	**100%**

Table 6: Showing distribution of reasons for inappropriate hospital stay due to surgeon responsibility in Surgical Emergency.

Hospital Responsibility. Inappropriate stay was 25.0% (n=60) of total cases. Among Hospital responsibility, 86.7% (n=52) cases had waiting for specialized investigations and 13.3% (n=8) had waiting for baseline investigations as a reason of inappropriate hospital stay (Table 7).

Hospital responsibility		
Reason for delay	**Frequency**	**Percentage**
1. Being Investigated(Baseline investigations e.g CBC, KFT, LFT, ECG, X rays)	**8**	**13.3%**
2. Waiting for investigations(specialized investigations e.g MRI, PET scan, Bone scan etc)	**52**	**86.7%**
Total	**60**	**100%**

Table 7: Showing distribution of reasons for inappropriate hospital stay due to hospital responsibility in Surgical Emergency.

Patient condition factors were responsible for inappropriate stay in 16.66% (n=40) of total cases. Among patient condition factors, 45.0% (n=18) cases had discharged but unwilling to go home as reason for inappropriate stay followed by 35.0 % (n=14) Unwilling to leave-Dressings as a reason for inappropriate hospital stay (Table 8).

Patient condition factors		
Reason for delay	**Frequency**	**Percentage**
Discharged — Unwilling to Go Home	**18**	**45%**
Discharged — Relatives Absent	**2**	**5%**
Discharged -- Bill Not Paid	**2**	**5%**
Unwilling to Leave Till All Tests Completed	**4**	**10%**
Unwilling to Leave — Dressings	**14**	**35%**
Total	**40**	**100%**

Table 8: Showing distribution of reasons for inappropriate hospital stay due to patient condition factors in Surgical Emergency.

Environmental factors were responsible for inappropriate stay in 15.8% (n=38) of total cases. Among environmental factors, 42.1% (n=16) cases had: Symptoms not fully relieved, but can be outpatient followed by 26.3% (n=10) cases had: Patient unable to follow up due to financial reasons as a reason for inappropriate hospital stay (Table 9).

Environmental factors		
Reason for delay	**Frequency**	**Percentage**
Patient Unable to follow up- financial reasons	**10**	**26.3%**
Patient cannot afford referral to higher centre	**6**	**15.8%**
Undergoing Physiotherapy	**6**	**15.8%**
Symptoms Not Fully Relieved, But Can Be Outpatient	**16**	**42.1%**
Total	**38**	**100%**

Table 9: Showing distribution of reasons for inappropriate hospital stay due to environmental factors in Surgical Emergency.

IV. DISCUSSION

Inappropriate patient hospitalization is the use of hospital services for patients where the treatment had no benefit for them or the case where the treatment can be delivered at less specialized levels with the same quality. At the contrary, appropriate patient hospitalization is the stay where patient needs continuous and active medical, nursing and paramedical treatments and delivery of these services in other places such as day and outpatient centers cannot be performed.

It was observed that 24.29% cases (n=345) in Medical Side and 41.38% (n=240) in Surgical Side had inappropriate stay.

The reasons for inappropriate hospital stay were divided into four groups:

a. **Physician/Surgeon's responsibility factors.**
b. **Hospital responsibility factors.**
c. **Patient condition factors.**
d. **Environmentalfactors.**

Physician/Surgeon's responsibility factors were responsible for the inappropriate hospital stay in majority of the cases in both Medical (42.7%) and Surgical Emergency (42.5%). Among physician/surgeon responsibility factors, interdepartmental calls/shifting /report awaiting was most important reason for inappropriate hospital stay, 38.5 % of the total cases in Medical Emergency and 24.1% of the cases in Surgical Emergency had inappropriate stay due to this factor.

Pourreza et al [6] reported 11.4% of the patients had inappropriate stay due to waiting / delay for surgery. In our study, 14.16% had inappropriate stay due to delay in surgeries.
These results are consistent with our study.

Al-Tehewy M et al [7] found that waiting for diagnostic and perioperative investigations was a major factor for inappropriate hospital stay in 17.0%-21.3% cases. Among Hospital responsibility, waiting for investigations was responsible for inappropriate stay in 18.2% cases in Medical Emergency while as it was responsible for inappropriate hospital stay in 21.7% of the cases in Surgical Emergency.

Among patient condition factors, discharge problems were responsible were for inappropriate stay in 11.5% of patients in Medical Emergency and 16.6% of patients in Surgical Emergency. Those Patients who need follow up, financial reasons were responsible for inappropriate stay in 7.3% of the patients in Medical Emergency.

In line with finding of present study, **Pourreza et al** [6] observed that absence of physician was responsible for inappropriate stay in 17.4% of the cases. It was also noted that 16.8% of the patients had inappropriate stay due to waiting for investigation. **Conclusion**
Inappropriate hospital stay increases hospital costs, decrease available resources for patients with critical situation and put patients at risk of nosocomial infections.
The study found that most important reason for inappropriate hospital stay was delay in interdepartmental calls/shifting both in Medical (38.6%) and Surgical Emergencies (24.16%). Waiting for investigations (18.2% in Medical Emergency and 21.6% in Surgical Emergency) was also a significant factor leading to inappropriate hospital stay.

Conflict of interest :none
Source of funding :none
Ethical Clearance :Taken

BIBLIOGRAPHY

[1]. Arab M, Zarei A, Rahimi A et al. Analysis of Factors Affecting Length of stay in Public Hospitals in Lorestan Province, Iran. Hakim Health Sys Res 2010;12(4):27-32.
[2]. Yaghoobifar M, Maskani K, Akaberi A et al. The Rate of Inappropriate Admissions and Staying of Patients in Hospitals of Sabzevar, Iran. J of Sabzevar Uni Med Sci 2011;18(3):224-32.
[3]. McDonagh MS, Smith DH, Goddard M. Measuring appropriate use of acute beds: A systematic review of methods and results. Health Policy 2000;53(3):157-84.
[4]. Chopard P, Perneger TV, Gaspoz J et al. Predictors of inappropriate hospital days in a department of internal medicine. Int J Epidemiol 1998;27(3):513-19.
[5]. Panis LJ, Gooskens M, Verheggen FW et al. Predictors of inappropriate hospital stay: a clinical study. Int J Qual Health Care 2003;15(1):57-65.

[6]. Pourreza A, Kavosi Z, Khabiri R et al. Inappropriate Admission And Hospitalization In Teaching Hospitals Of Tehran University Of Medical Sciences. Pak J Med Sci 2008;24(2):301-5.
[7]. Al-Tehewy M, Shehad E, Al Gaafary M et al. Appropriateness of hospital admissions in general hospitals in Egypt. East Mediterr Health J 2009;15(5):1126-34.