



A STUDY ON AVERAGE LENGTH OF STAY FOR EFFECTIVE UTILISATION OF HOSPITAL BED AND REMEDIAL MEASURES FOR OPTIMUM LENGTH OF STAY IN HOSPITAL

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ABSTRACT

Providing timely consultations and investigations helps in early diagnosis and treatment with optimum length of inpatient stay in hospitals. This increases bed turnover rate (BOR) with more turnover of patients, which helps in providing cost effective treatment with patient satisfaction. Non-optimal utilization of beds due to increased length of stay decreases the availability of beds, leading to less turnover and marked decrease in revenue generation. An in-depth study was made to study the reasons for increased length of stay at NIMS, Punjagutta, which is a tertiary care super-specialty hospital. Study was based on scrutiny of records and structured questionnaires to patients, attendants and doctors/ nurses. The study infers that pre-admission work-up, planning, coordination and over all workflow design with relevant patient relation management are the important factors for effective inpatient administration.

KEYWORDS :

INTRODUCTION

In today's world, we are being flooded by information from various sources pertaining to each and every field. The need of the hour is to sift the information available and use only the necessary information and data for the development of the earth and its denizens depending upon its accuracy and relevance for further reference.

The modern concept of a hospital goes far beyond the conventional idea of a hospital as a place for the treatment of the sick. It visualizes the hospital as one part as a comprehensive system of preventive and curative medicine covering the primary care and public health and the other part as an institution devoted not only in providing tertiary care treatment but also providing medical education, training and research.

Establishment of hospitals and their day to day operations have become costlier in delivering the health care services and so they have become expensive to build and to operate. Their initial capital cost is high and their running cost and recurrent expenditure year after year, especially for inpatient services is enormous. Since resources are always limited to meet many health needs, priorities have to be set. This envisages proper planning so that resources are not wasted and utilized effectively.

Resources are needed to meet many health needs and requirements of a community and to meet the investment for installing the beds required is very difficult in our country because of the desperate shortage of resources for money. Hence, it is very much important to adopt suitable strategies to get the best out of the already present limited resources for establishing the hospital beds. There is a need for effective utilization of the hospital beds, so as to serve more number of patients is the best alternative.

Increased length of stay for non-medical related issues pose a significant problem to the integrity and functioning of the hospital. Lengthy inpatient stay is a major factor and challenge for managing beds, which is a common concern of hospitals. The need for optimum utilization of hospital beds by minimizing length of stay has gained increasing importance globally over recent decades. Increased length of stay not only causes frustration for patients and family members, but also causes delay in the admission of incoming patients. Increased length of stay is undesirable for a number of reasons like economic, administrative, social and transport reasons which leads to inappropriate bed use which is a waste of resources. Further, with increased length of hospital stay, there is a higher risk of hospital-acquired infections leading to depression, and causing decline in functional independence.

Optimizing the patient length of stay will increase the patient satisfaction and increase in revenue generation.

Based on data from patient satisfaction surveys, Mr. Clark says that patients who have longer hospital stay are actually significantly less satisfied than patients with shorter stay. Ultimately, the quality of patient care is considered than the length of stay.

It can be ascertained that there are two aspects of utilization of hospital beds. The first one deals with the measures, which keep patients out of hospital and thus lessen the demands on beds, eg., domiciliary services, Out-patient services, health education and other preventive health programs.

If one studies each and every case individually about in-patients in hospitals, it will not be very difficult to find patients still on bed which are not related to clinical problems but delay in several issues such as lack of planning, no preadmission work-up, no pre-anesthesia check-up, cardiac clearance, blood donors, financial clearance, health insurance approvals, faculty on vacation, OTs / Wards under maintenance, public holidays, Non-availability of OT days, Non-availability of anesthesia's, non availability of equipment such as C-Arm, delay in investigations and their reports, discharge procedure, billing procedure and other administrative issues. It is this aspect of hospital functioning and utilization was chosen for the present study.

The present study is done to assess the performance of NIMS to see whether the Institute is performing at the optimum, the changing trends, and also to study the discharge process. The other purpose of the study is to assess the need for formulating a Policy & procedure for early discharge of the patient in the hospital.

Objective of the study

1. To study the length of stay from discharges.
2. To assess the number of hospital days stay from the day of admission to day of discharge.
3. Length of stay - impact on medication management and on patient satisfaction, financial effectiveness
4. Identify bottlenecks for over stay, if any and to suggest means to improve.

When gaps in the process are not minimized, inefficiencies are maximized. These gaps or delays in service produce an upstream tidal wave of patient-flow constraints, which negatively impact costs, operations, service, and quality. Strengthening the focus of the discharge planning team in conjunction with increasing their

awareness of the financial and clinical components associated with patient throughout can add significant value to the organization.

METHODOLOGY:

Both prospective and retrospective studies were carried out on inpatients so as to identify the factors increasing the length of stay in the hospital.

Record Study:

a. Retrospective study
The primary source of data in this study has been the discharged patients, where the relevant records are verified and the required data is collected for the six months. Structured questionnaire was prepared for the purpose to analyze the time taken covering all the major parameters. Scrutiny of eight hundred cases selected randomly for relevance and adequacy of information under ten major headlines was performed.

b. Prospective Study

A prospective study of the inpatient records and other documents was done for a period of four weeks by collecting the daily data.

Observation Study

- a. Admissions in each specialty patients are evaluated.
- b. Existing inpatient non-clinical procedure for the patient is observed at ward/ room from nursing station.
- c. Bottlenecks were scrutinized, discussions were held with various doctors of different specialties. Suggestions for minimizing days stay of the patient were gathered from the doctors, nurses, lab investigation personnel, patients and patients attendants and Aarogyasri /EHS/ JHS insurance scheme personnel.

Limitations of the Study:

Every study has got its own limitations. A few of them are listed below:

- 1. Since the data collected is based on record from issuing case sheet at admission counter to issue of "No Dues" to vacate the bed, it is beset with problems that are usually associated with the working personnel.
- 2. In depth studies, which look into the functioning of individual specialty patients, are usually viewed with skepticism and apathy; and sometimes an underlying current of resistance is encountered because of unwarranted apprehensions. However as the investigator was able to prove his commitment and application, it became increasingly easier to establish rapport in order to elicit information and obtain cooperation in collecting the relevant data.

DISCUSSION

NIMS is a fully equipped super specialty hospital and the faculty members are renowned professionals in their respective fields. There are 29 Out patient departments, 18 inpatient departments out of which 9 are broad specialties, in addition to 8 supportive service departments.

NIMS inpatient bed strength is 1300, with 10 highly sophisticated operation theaters, 9 Intensive care units, 23 Wards and Special rooms, and well equipped Emergency Medicine Department. NIMS is a referral hospital with a clientele of around 110 organizations and is catering to about 6.30 lakh Out-Patients and about 39,000 In-Patients annually. It performs 11,000 major operations, 10,000 minor operations annually.

One of the major admissions is from Community Health Insurance Scheme in Telangana named as Aarogyasri with an objective is to improve access of BPL families to quality medical care for treatment of diseases involving hospitalization and surgery through an identified network of health care providers. A total of 934 diseases are being covered under this scheme. The beneficiaries of the scheme are the members of BPL families.

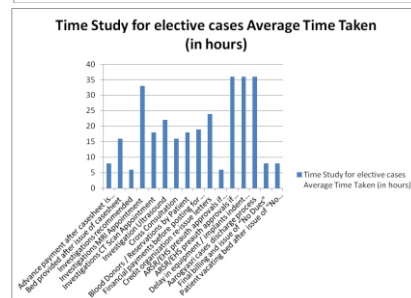
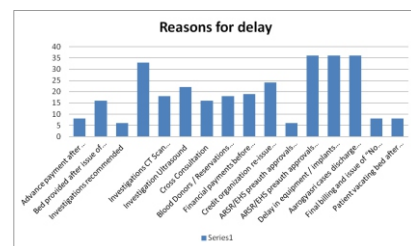
An in-depth study of the inpatients in NIMS and a real time and committed study of the time taken for actual admission to discharge is observed for a period of over four weeks. The following observations are a result of the above study. The observation is as elicited from responses during interaction are as follows:

| Time period | Avg. case sheets Issued for Admission |
|---------------|---------------------------------------|
| 8 am to 12 pm | 46 |
| 12 pm to 4 pm | 33 |
| 4 pm to 8 pm | 15 |
| 8 pm to 8 am | 11 |

Patient occupancy on bed immediately after issue of case sheet is 56% inclusive of admissions in paying rooms with prior booking. 10 % cases are of Day care where inpatient bed is not allotted, all of them are Aarogyasri/EHS/JHS day care Haemodialysis patients. 22% patients wait at corridors for vacant bed which is provided after the discharge patient vacates bed i.e. around 7.00 pm. 9% admissions are for EMD where they are accommodated at EMD on bed / trolley and few cases directly shifted to OT's. 2-3% case sheets are at Cath Ward, patient reports directly to Cath lab for Coronary Angiogram on the next day.

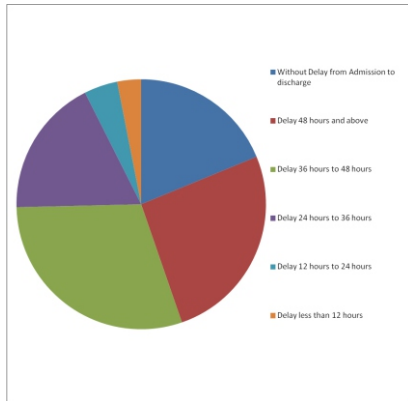
Average time for inpatient investigation such as Coronary Angiogram for cardiac fitness >60 years age for surgical cases 3 - 4 days, MRI, CT Scan, Biopsy and other special investigations 2 - 3 Days.

| Time Study for elective cases | |
|-------------------------------------------------------------------|-------------------------------|
| Purpose | Average Time Taken (in hours) |
| Advance payment after casesheet is prepared | 8 |
| Bed provided after issue of casesheet | 16 |
| Investigations recommended | 6 |
| Investigations MRI Appointment | 33 |
| Investigations CT Scan Appointment | 18 |
| Investigation Ultrasound | 22 |
| Cross Consultation | 16 |
| Blood Donors / Reservations by Patient | 18 |
| Financial payments before posting for surgery for routine cases | 19 |
| Credit organization re-issue letters | 24 |
| ARSR/EHS preauth approvals if mandatory reports are available | 6 |
| ARSR/EHS preauth approvals if mandatory reports are not available | 36 |
| Delay in equipment / implants indent from stores | 36 |
| Aarogyasri cases discharge process | 36 |
| Final billing and issue of "No Dues" | 8 |
| Patient vacating bed after issue of "No Dues" | 8 |



The delay occurred due to various reasons are compiled and the delay in hours is as mentioned below:

| Time Period | No of Cases |
|-------------------------------------------|-------------|
| Without Delay from Admission to discharge | 523 |
| Delay 48 hours and above | 721 |
| Delay 36 hours to 48 hours | 833 |
| Delay 24 hours to 36 hours | 499 |
| Delay 12 hours to 24 hours | 121 |
| Delay less than 12 hours | 86 |



- When the decision regarding admission is communicated to the patient at OPD and admission orders are written in OP book, 66% of the cases are admitted on the same day, 10% of cases are admitted as per the particular day of patient wish. 15% opts for special room and admit later as and when the room is allotted. Remaining have not taken the case sheet, the reasons may be financial, credit letters, other hospital, not interested in surgery/treatment, second opinion etc. The bed management becomes difficult as the consultant knows about the admission only after he makes rounds in wards. Then the treatment is initiated/ investigations are advised.
- There is delay in providing bed immediately.
- Pre-admission workup is done only in few departments.
- In certain departments like cardiothoracic surgery the length of stay is too high.
- There is delay in writing "Discharge summary" by doctors which could be attributed to work pressure and lack of time.
- When the case sheet is sent to Aarogyasri section / Billing section case sheet is returned from IP Billing section to ward for lack of entries such as Operation charges, Ward transfers, issue of medicines, disposables, mandatory discharge investigations for Aarogyasri/EHS/JHS. 26 % case sheets are returned for these reasons.

Recommendations

- Orientation classes regarding the issues related to Aarogyasri /EHS/ JHS to be conducted to doctors, nursing, billing and other personnel.
- The need for early discharge of the patient, thus reducing the length of stay improves bed turn over rate of the hospital.
- The patient / attendant should be informed at least 2 days prior to discharge, as the patient prepares for finance, transport and other arrangements.
- Call for dietician, physiotherapist for advising patient should be a day before discharge.
- The ward billing clerks should update the case on day to day basis and inform the patient attendants for collection of due amounts.
- For Aarogyasri Category cases, as it is cashless facility, the justification is for internal purpose, there is no need for the patient to be retained. On the same day of billing the "No Dues" can be issued and the patient may vacate the bed.
- Actual time the patient occupied the bed on admission and time the patient physically vacated the bed to be recorded in the ward nursing register or in the computer data base.

- Over staying in the hospital ward after preparation of discharge summary and final bill may lead to legal issues later stage as the stay is unauthorized without any medical record.
- By providing computer systems with user friendly software programs at every nursing station and other places. The patient data can be entered by health care providers such as doctors, nurses, paramedics regarding stores supply, investigations, pharmacy, operation theatres to facilitate to build up electronic medical record (EMR) and also to facilitate for preparation of discharge summary, easy billing improves accurate bed occupancy rate and proper bed utilization.

CONCLUSIONS

Modern health care requires a system of running review for two main reasons. The first is to ensure the greatest possible effectiveness of its procedures, the second is to ensure that the best possible result is obtained from resources, which are and will remain less than optimal.

The performance of the hospital is not improving in terms of patients turnover when compared with bed strength. The reasons could be attributed both to the internal and external environments of the hospital. The external environmental factors are the increasing number of hospitals and nursing homes in the twin cities with increasing competition and the change in public demand. The internal factors are the bottlenecks affecting the speedy discharge of the patient, which in turn results in improper utilization of the hospital bed which affects the revenue and patients turnover.

The issues mostly revolve around the factors like admission and discharge polices, availability of beds in certain specialties, unnecessary prolonged hospital stay, etc. These factors should be stressed upon and be minimized, so as to improve the bed utilization and thereby overall performance of the hospital.

The Bed Occupancy Rate for the year 2016 is 78%, Bed Turn over interval is 2.6 days and Average Length of Stay is 10 days for medical management cases and 16 days for surgical cases.

Since the billing revenue is higher during the first few days, decreasing the average length of stay for treatment and shifting of the patient to stepdown ward and vacating the bed early may result in effective utilization of resources. With great vision, perfect planning, efficient execution and well coordinated effort from all the service providers regarding the decision of discharge of patients by completing all the required formalities in time are essential for minimizing the unnecessary stay of patients after discharge.

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