

A STUDY OF PATIENT DISCHARGE PROCESS IN A MULTIDISCIPLINARY HOSPITAL OF TIER-I CITY OF INDIA

Dr. AJAI KUMAR JAIN^{1*}, Dr. HRISHIRAJ PANWAR²

¹Senior Assistant Professor, Institute of Management Studies, DAVV, Indore, MP, India

²Scholar, Institute of Management Studies, DAVV Indore, MP, India

*Corresponding Author, email: ajju34jain@yahoo.co.uk

Abstract - This is an exploratory study focused on analysis and improvement of patient discharge process in multi specialty hospital and its impact in health care industry. In this retrospective study calculation of discharge time of fifty (50) IPD patients was done. The patients were classified into two categories, CASH patients & TPA-patients admitted during one month (13th June to 13th July, 2013) in the hospital in year 2013. The study concluded that the discharge process for TPA-patients (271.48 min/pt) took 2.78 times longer than Cash patients (97.32 min/pt). Recommendations include the need to reduce discharge time to increase customer satisfaction, the number of admissions, bed turnover and hospital profitability.

Keywords - Discharge process, CASH-patients, TPA-patients, Inpatient Department (IPD), Bed-Turnover.

INTRODUCTION

Hospital is age old establishments (Sakharkar, 2009). Now it has become a well known industry. The patient undergoes various processes while hospitalization likes admission, diagnosis and treatment process, surgery and discharge process. The last part of the patient in hospital is the discharge or relieving from the ward/ In-patient department. Seemingly simple it is a lengthy and complex process as it involves coordination and integration exercises of many units of hospitals. There is a large volume of literature, published since the 1980s regarding processes of discharging (Discharge of Patients from Hospital NHS 1989 and 1997).

Discharge process is "The formal process whereby an inpatient leaves the hospital at the end of an episode of care." The number of discharges includes discharges to home, transfers to other hospitals, nursing homes or other institutions, and deaths of persons who were inpatients at the time of death. The discharge process is crucial area in the hospital management as its improvement will also lead to increase in customer

satisfaction, increase the number of admissions and turnover and ultimately increase in hospital profitability and social welfare.

The national accreditation body in India, NABH describes 2 standards (AAC.13 & AAC.14) for discharge process in Chapter-I of its NABH booklet (NABH, 2011). The discharge process as per NABH has 11 objectives in toto. Joint Commission Internationale (JCI), an international accrediting body prescribes more standards than NABH reflecting the importance and cruciality of the process. In the present study, the author has observed and calculated the discharge timings for 2 groups of patients-CASH patients and TPA patients. TPA patients timing

OBJECTIVES

1. To collect & analyse the data regarding discharge process timing of Cash-patients and TPA-patients.
2. To compare the discharge timings and find ways to reduce the discharge timings.

RATIONALE

1. Discharge process is an inevitable and crucial part of hospital operations.
2. There is a very limited study on discharge process in India (research papers not available).
3. Despite exhaustive study in many areas the comparative study of discharge timings are not done in abroad also.

LITERATURE REVIEW

The discharge process is an inevitable and crucial part of patient's stay in hospital. Mc. Keehan, 1981 defined discharge process. There is a large volume of literature, published since the 1980s, which discusses regarding the process abroad. The first large body of discharge research in the year 1990s and early 2000s identified that the discharge process is highly complex, fragile and prone to breakdown. Six Sigma methodologies can help improve the discharge process to large extent especially in highly occupied hospitals (Vanda Ametlli, 2010). Lot of research in between 1980 to 2012 on discharge process abroad concluded major and minor issues on improving the process and using it for the economic benefit of hospitals.

There is a lack of research papers on discharge process in India. Helping resident physicians can improve many aspects of discharge process (Kathleen et al, 2011). The work abroad does also lack in comparing the discharge time in cash and TPA patients. NABH booklet (2011) of standards for hospitals mentions about the need of standardization of discharge process in hospitals in Chapter 1, under standard AAC13 & AAC14. JCI and other national Accreditations also mentions of the processes and cruciality of discharge process. It is surprising that many books on hospital administration in India don't describe this crucial area.

METHODOLOGY

It is an exploratory study done in organized industry of health care. Universe of study- Multi-specialty 149 beds hospital of Navi Mumbai. The hospital has occupancy rate of approx 70%. The findings can be obtained by the following steps: construction of flow chart of the discharge process (Annexure-1), identification of the matrix (Annexure-2), collection of observations (Annexure-2).

Data will be tabulated according to steps followed in discharge process. Statistical analysis of tabulated data shall be done with outliers' detection method. Statistical tools like average will be applied as follows--
Average = total discharge time summation / total patients discharged. The stages were used to collect the real life data of discharge process time for the insured patients.

Those data points were collected for a period of 4 weeks. Sample data from the discharge process time at the hospital is shown below in annexures 1 and 2. Patient discharge per day approx 15, So 15 patient (app.) * 30 days = 450 pt. Discharge per month (approx.). We take as a sample 10 % of total discharge in a month for observing the current status of discharge process (5% TPA+ 5% cash) = Total 50 (25+25) patient. Statistical analysis has been done with outliers' detection method.

This analysis is done to establish the reference base for the current performance of the process result achieved by average (mean) method. The cycle time of the each Discharge process will be calculated by the summation of all the time periods taken for each step of each discharge. The cycle time in this study included as both, the service time and the waiting time. Both groups of patients will be tested for TPA & Cash Patients on its own in order to clarify what are the main factors affecting to discharge process, we have taken the cycle time for each category separately.

DATA ANALYSIS AND INTERPRETATION

Total time consumed in pt. discharge process (TPA) = 6787min.

Total time consumed in pt. discharge process (CASH) = 2433min.

Total time consumed in the process jointly = 6787+2433 = 9220 min.

Average time single pt. discharge (TPA) = 271.48 min or 4.52 hr

Average time single pt. discharge (CASH) = 97.32min. Or 1.37hr

Average time single pt. discharge jointly = 9220 min. / 50pt. = 184.4 min or 3.07hr

CONCLUSION

- The discharge process time for TPA patients was 4 hrs and 52 minutes which is 2.78 times more than Cash-patients'.
- The discharge process time for CASH-patients was 1 hour and 37 minutes
- There is a suggested need for improvements for TPA-discharge process time. The recommendations below can help to reduce the time of discharge process along with the increase customer satisfaction, the number of admissions, bed turnover and hospital profitability.

RECOMMENDATIONS

- Ward officers and Resident doctors are supposed to recheck the Discharge summary. As well as Resident doctors should guide ward officers while they are preparing the discharge summary and then if possible they should take Consultant's signature over discharge summary.
- Ward officer should daily update the patient's summary (means daily hospital course updates should be done)
- Nursing staff should order only required medicines as per need.
- If possible to provide all discharge files at single place from all wards for preparing discharge summary. This will

save time as ward officers won't have to move from one ward to other.

Design a flow chart or poster of discharge process to guide the Patients attainer.

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ANNEXURE - 1

Construction of the flow chart for the process: The steps will help to understand how the entity (material, customer, patient) flows through the process, and what was the role of each activity. The insured patient's discharge process has gone through the following events.

a) TPA Patients Discharge process (planned /unplanned discharge)

Consultant orders to nursing staff/unit for discharge



Nursing staff collect all the documents & return all extra packed medicines of patient to pharmacy, he/she informs ward officer to prepare discharge summary. The documents are sent to billing department.



At billing counter, Patient's file get cross checked & final bill is prepared. This is sent along with discharge summary for TPA approval. After TPA approval, clearance slip is given to patient's attendant in multiple copies.



After bill clearance, the nursing staff gives the discharge summary to the patient & explains the discharge instruction. Then the patient is finally discharged from the hospital.

b) Cash Patient Discharge process (planned /unplanned discharge)

Consultant orders to nursing staff/unit for discharge



Nursing staff collect all the documents & return all extra packed medicines of patient to pharmacy, he/she informs ward officer to prepare discharge summary. The documents are sent to billing department.



At billing counter, Patient's file get cross checked & final bill is prepared.



Patient's attendant pays the bill & get clearance slip in multiple copies.



After bill clearance, the nursing staff gives the discharge summary to the patient & explains the discharge instruction. Then the patient is finally discharged from the hospital

ANNEXURE-2

Identification of metrics: Discharge time for the patients, starts when the consultant gives discharge order and end when patient leaves the ward.

Table 1. For TPA Patients

S. No.	Patient's IPID-IP00	Step 1	Step 2	Step 3	Step 4	Step 5
1	53855	9:00	9:30	9:45	12:40	12:53
2	53797	10:25	10:55	11:20	18:00	18:17
3	53554	9:30	9:45	9:54	13:15	13:34
4	53236	9:25	10:15	10:35	11:00	16:09
5	53762	10:20	10:35	10:49	11:28	13:25
6	53930	15:30	15:50	16:05	16:20	17:30
7	53981	7:00	7:10	7:12	7:45	12:23
8	53928	10:10	10:40	10:48	11:00	14:34
9	53471	10:20	10:50	13:30	13:55	14:28
10	53691	10:30	10:40	11:04	14:00	14:35

Step 1: Order for Discharge

Step 2: Collect Document & Send

Step 3: Intimation to dept.

Step 4: Prepaid bill

Step 5: Paid finally

Table 2. For TPA Patients

S. No.	Patient's IPID-IP00	Step 1	Step 2	Step 3	Step 4	Step 5
22	53966	15:30	16:40	16:45	17:10	19:30
23	53701	10:30	11:15	11:20	12:08	13:36
24	53623	15:00	15:48	15:50	16:10	16:25
25	53989	9:00	9:35	9:40	10:00	11:02

Step 1: Order for Discharge

Step 2: Collect Document & Send

Step 3: Intimation to dept.

Step 4: Prepaid bill

Step 5: Paid finally

Average time (TPA PATIENTS) – in discharge process

Average Time = Total time consumed in discharge process by sample in a month / Total no. of sample

= 6787 min. / 25 pt.

Avg. = 271.48 min / pt.
(approx 4 hr 52 min / pt.)

Table 3. For Cash Patients

S. No.	Patient's IPID-IP00	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
1	53907	9:15	9:20	9:26	9:32	9:58	10:20
2	53859	10:05	10:15	10:20	10:27	10:55	11:37
3	53958	9:10	9:25	9:30	9:33	10:00	10:20
4	52176	13:45	14:00	14:13	14:23	14:35	14:45
5	53860	10:10	10:15	10:25	10:30	11:28	12:11
6	54034	12:30	12:50	12:55	13:05	13:55	14:30
7	54029	12:20	12:45	13:00	13:05	14:00	14:38
8	53913	9:25	9:30	9:45	9:48	10:15	10:40
9	54090	12:45	13:05	13:15	13:20	14:15	14:58
10	54196	10:05	10:15	10:20	10:23	10:50	11:11
11	54235	10:30	10:45	10:47	10:48	11:45	12:25
12	53977	9:40	9:50	9:55	9:58	10:40	11:16
13	54194	10:20	10:35	10:45	10:48	12:00	12:43
14	53822	9:30	9:45	9:50	9:58	10:45	11:32
15	54146	10:20	10:35	10:40	10:43	11:00	11:37
16	54211	10:10	10:25	10:45	10:47	11:45	12:01
17	54336	10:40	10:50	10:54	10:59	12:40	13:12
18	53881	13:00	13:10	13:14	13:15	13:50	14:44
19	53987	13:55	14:00	14:10	14:15	14:45	15:14
20	54091	15:30	15:50	16:05	16:08	16:18	16:31
21	54015	10:10	10:20	10:28	10:30	11:15	11:43
22	54089	10:15	10:25	10:40	10:45	11:00	11:26
23	53707	11:50	12:05	12:15	12:20	13:10	13:58
24	54319	8:30	8:40	8:45	8:47	9:00	9:21
25	54053	10:35	10:45	10:50	10:55	11:45	12:14

Table 4.

S. No.	TPA Patients	CASH Patients
1	233 min.	65 min.
2	485 min.	92 min.
3	244 min.	70 min.
4	436 min.	60 min.
5	185 min.	121 min.
6	120 min.	120min.
7	323 min.	138min.
8	264 min.	75 min.
9	248 min.	133 min.
10	245 min.	66min.
11	180 min.	115min.
12	445 min.	96 min.
13	390 min.	138min
14	428 min.	122 min.
15	445 min.	77 min.
16	395 min.	111min.
17	138 min.	148min.
18	181 min.	104 min.
19	210 min.	79min.
20	289 min.	61min.
21	270 min.	93min.
22	240 min.	71min.
23	186 min.	128min.
24	85 min.	51 min.
25	122 min.	99 min.
Total	6787 min. (113.11hr)	2433min. (40.55hr)

Average time (CASH PATIENTS) - in discharge process

Average Time = Total time consumed in discharge process by sample in a month / Total no. of sample
 = 2433 min. / 25 pt.

Avg. = 97.32 min

(approx 1 hr 37 min)