

Brief Report

Current trends and possible solutions for delay in patient discharge: observations from a tertiary care paediatric hospital in Mumbai

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ABSTRACT

Delay in discharge of the patient reduces bed availability in any healthcare organization. In spite of advancement in medical systems and hospital management, delay in patient discharges still exist. Hence, there was a need to evaluate factors contributing to the delay in an exclusive paediatric hospital. A study of patient discharges from a private and a general ward was undertaken at a tertiary care paediatric hospital in Mumbai, between September-October 2021. A total of 60 discharges, 30 from each ward were analysed. The time from discharge order given by the consultant to that of the patient leaving the hospital and the reasons for delay were recorded by the investigators. The hospital followed a policy of 180 min for a discharge. The mean duration of discharge in the general ward was 153.18 ± 34.60 min and whereas it was 165.41 ± 62.29 min in the private ward. However, 28% discharges in general ward and 43% discharges in private ward were delayed with a mean of 5.23 ± 10.04 and 20.66 ± 26.88 min respectively. Time taken for billing and making of discharge sheet contributed to the maximum delay in both wards. Though the mean discharge time in both wards was found to be within the standards, a significant proportion were still delayed. We suggest a multidisciplinary team consisting of administrators, nurses, resident doctors and consultants to help ease the overall burden on the healthcare system.

Keywords: Discharge time, Bed availability, Audit, Paediatric patients

INTRODUCTION

As per National Accreditation Board for Hospitals and Health Care Organizations (NABH), "Discharge is a process by which a patient is shifted out from the hospital with all concerned medical summaries ensuring stability". The discharge process is deemed to start when the consultant formally approves discharge and ends with the patient leaving the clinical unit. NABH suggest each hospital to have its own discharge policies and a standard

discharge time.² Delay in discharge of the patient reduces bed availability of the hospital. It is of great importance, especially in India, due to a huge mismatch between the number of patients and availability of beds in a hospital.³

The factors which play a key influence on hospital discharge time are time taken for nurses to explain the discharge process to the relatives, payment process, time taken by resident doctors to prepare the discharge sheet, its

review by senior consultant and communication of discharge information to patient/their relative.^{4,5}

A study by Srivastava et al found that non-medical delay in discharge was common in tertiary children's hospital, with 1 out of 4 patients experiencing it.⁶ There was a need to understand the current trends in discharge time and areas of delay so as to plan effective strategies to improve upon the same. Reducing hospital discharge time will help in maintaining a smooth and good flow of patients and readily available beds for new patients along with improved patient satisfaction. The objectives of this study were (a) to identify and compare the hospital discharge time taken in a general ward and a private ward of a tertiary care paediatric hospital; (b) to analyse the factors causing the delay in the hospital discharge process; and (c) to suggest and implement a long-term sustainable change to help reduce hospital discharge time

METHODS

A cross-sectional study was undertaken at B. J. Wadia Hospital for children which is a NABH accredited, tertiary care, paediatric hospital in Mumbai. An audit of patient discharges was conducted between September-October 2021, in a private and a general ward of the hospital. A total of 60 discharges, 30 each from private and general wards were considered for the study.

Data of all the patients who were discharged on a given day was included during study period, till the required sample from each ward was reached. Data of patients who were discharged against medical advice (DAMA) was excluded. A structured proforma was used to record the time taken for each step of discharge i.e., from the time of discharge order given by the consultant, to the patient leaving the hospital premises (Figure 1).

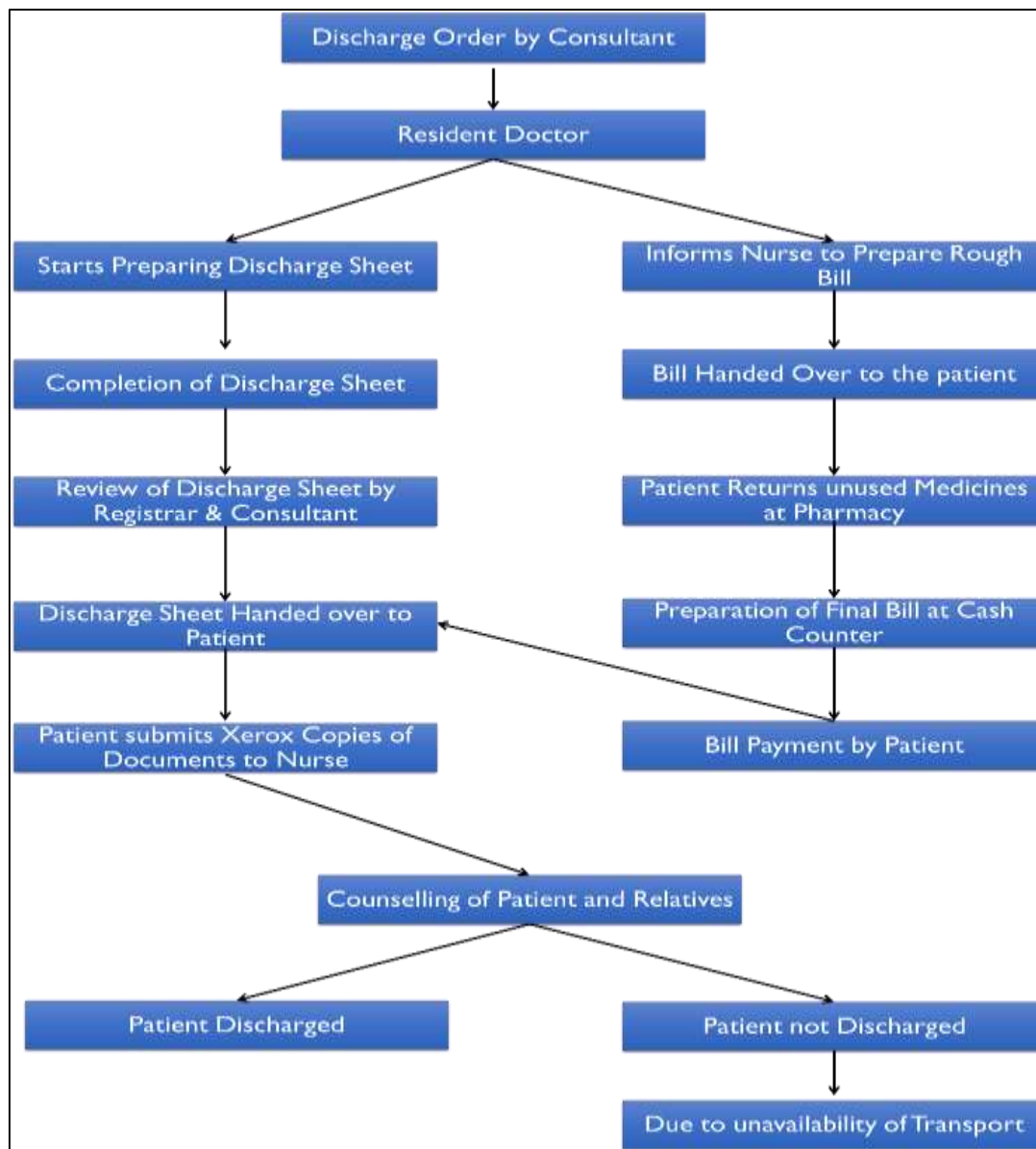


Figure 1: Step by step flowchart of the discharge process.

The time taken for each of these steps was considered as a separated variable. The investigator, in coordination with a staff nurse tracked all bed numbers that had received a discharge order on a daily basis. The data was recorded on the proforma by passive observation of the entire process. There was no direct interaction between the investigator and the patient, ensuring strict confidentiality. The hospital followed a policy of 180 min for a discharge. Any time greater than 180 min was considered as 'delay in discharge'. All possible reasons for delays in each of the discharges were noted. Suggestions to decrease the discharge time were made. Data was entered in MS excel 2019 and was analysed using JASP (v0.16.0.0) software. Descriptive analysis was performed to find the mean (SD)

time taken in every step of the discharge process. Unpaired t test was used to compare the time intervals of discharges in the general and private wards. P value less than 0.05 was considered significant.

RESULTS

A total of 60 discharges (30 from each ward) were tracked. Time taken for each step of the discharge process in both private and general ward is summarized in Table 1 and Figure 2. The mean duration of discharge in the general ward was 153.18±34.60 min and 165.41±62.29 min in the private ward respectively.

Table 1: Time taken for each step of the discharge process in both private and general ward.

Time interval	Ward	Mean time (min)	Standard deviation (min)	Effect size	P value
Duration between order and starting discharge sheet	General	71.266	34.140	1.471	0.001*
	Private	30.833	17.827		
Duration of making discharge sheet	General	10.359	5.957	-1.696	0.001*
	Private	22.417	8.160		
Duration between order to billing	General	22.484	23.951	0.444	0.086
	Private	14.417	8.348		
Duration between order to payment	General	88.422	29.786	-0.877	0.001*
	Private	130.750	62.188		
Duration between payment and discharge	General	65.156	44.842	0.805	0.002*
	Private	34.333	29.689		
Total duration	General	153.188	34.606	-0.245	0.339
	Private	165.417	62.295		
Total delay	General	5.234	10.047	-0.770	0.004*
	Private	20.667	26.885		

* p value statistically significant.

Table 2: Comparison of time taken by cash payers and TPA payers in private ward.

Time interval	Payment	Mean time (min)	Standard deviation (min)	Effect size	P value
Duration between order to billing	Cash	17.885	10.842	0.775	0.044*
	TPA	11.765	4.573		
Duration between order to payment	Cash	81.346	45.192	-1.947	0.001*
	TPA	168.529	44.477		
Duration between payment and discharge	Cash	42.115	37.567	0.467	0.215
	TPA	28.382	21.267		
Total duration	Cash	123.846	58.511	-1.438	0.001*
	TPA	197.206	44.589		
Total delay	Cash	8.077	17.974	-0.893	0.022*
	TPA	30.294	28.992		

* p value statistically significant.

Both of these were within the hospital discharge time standards. However, 28% discharges in general ward and 43% discharges in private ward were delayed (Figure 2) with a mean delay of 5.23±10.04 and 20.66±26.88 min respectively.

The mean time durations for all the procedures of discharge were significantly different in both the wards,

except for 'duration between order to billing'. There was no significant difference in mean total time and mean delay in general and private ward ($p>0.05$). On subgroup analysis of Private ward data, significant difference in discharge time was noted between those who paid by cash (13 discharges) and those done by third party administrator (TPA) (17 discharges) ($p=0.001$) (Table 2).

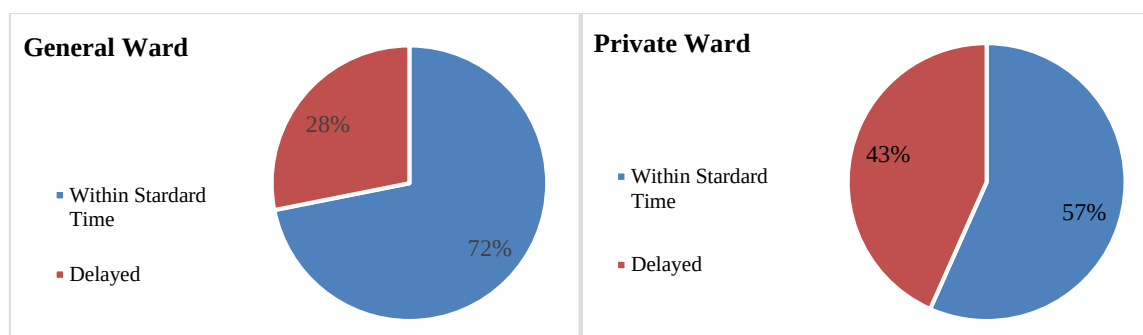


Figure 2: Proportion of discharges delayed in general and private ward.

DISCUSSION

Our audit found that the average discharge time in a general and private ward of a tertiary care paediatric hospital were within the standard time duration as per the hospital discharge policy. However, a significant proportion of these discharges from both wards were still found to be delayed. The significant difference in mean time duration for all steps (except billing) for both the wards indicate that there are different factors causing delay at different levels in each ward. The most common cause of hold-up in discharge of patients in the general ward was preparation of discharge sheets, which was due to the multi-tasking by the resident doctors coupled with other clinical responsibilities. The process for TPA payment contributed to maximum delay in the private ward. The other causes for delay in both wards included, time taken to return extra medicines to the pharmacy, shortage of nurses, misplacement of files, delay in receiving investigations and lastly reluctance by the patient or family to leave on time due to personal reasons. Any delayed discharge can overburden the already burdened healthcare system, causing unavailability of beds. The increase in hospital stay also leads to increased chances of hospital acquired infection and cost of care.⁷ Thus it is imperative that steps should be taken to reduce this delay and achieve lower discharge time.

Recommendations

Delay in billing process can be resolved by introduction of a Multi-task desk (MTD) which serves as a single-stop solution for all administrative processes related to discharge like billing, pharmacy, settlement of bill, as proven by a study by Udayai et al.⁸ The reason for the highest number of delays i. e.; delay in preparation of discharge sheet can be solved by assigning one resident doctor (on a rotation basis) for preparation of discharge sheets after the consultant rounds. Other probable interventions would be maintenance of specific racks for keeping the discharge files with appointment of a floor clerk to manage bills, documents and files of the patients to be discharged. Better coordination between doctors and nursing staff will ensure a smooth and linear execution of the whole process. Patients should be provided with a roadmap of the complete discharge process right at the

beginning to avoid delay in returning medicines, in getting the documents photocopied and understanding post-discharge advice/instructions from the doctor/nurse.

Strengths and limitations

This is one of the few audits done in a tertiary care paediatric hospital in India, which focuses simultaneously on improving patient experience as well as hospital management policies. Comparison of discharge time of patients from general and private ward of the same organization was one of the highlights of this study. An in-depth analysis of time duration for each step of the discharge process and qualitative assessment of the reasons behind the delays were the foci. The findings of this study need to be interpreted considering the limitations of being from a single centre, small sample size and it only provides suggestions for possible interventions.

CONCLUSION

The current trends in discharge process show that though the mean discharge time in both wards was found to be within the standards, a significant proportion were still delayed. We suggest a multidisciplinary team consisting of administrators, nurses, resident doctors and consultants to help ease the overall burden on the healthcare system. This study serves as a pilot and calls for multicentric studies to assess the effectiveness of implementation of the suggested interventions to help overcome the barriers for prompt and seamless discharge of patients.

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