

A Study on Discharge Process of Discharged Patients of a Multispecialty Hospital Ludhiana

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ABSTRACT

Discharging patients from the hospital is a complex process that is fraught with challenges. Discharge planning is the development of an individualized discharge plan for the patient prior to leaving the hospital, to ensure that patients are discharged at an appropriate time and with provision of adequate post discharge services. The present study has been conducted on 270 patients admitted at a multispecialty hospital, Ludhiana to understand the flow of discharge process. Various timings including discharge intimation time, billing card submission time, drugs clearance time, pharmacy clearance time, final bill intimation time, final bill clearance time, final summary time, handover time, vacancy of room and time taken for preparation of room for next patient were recorded to study actual time taken at each step from discharge order to the physical room vacancy by the patient. The present study results revealed that maximum turnaround time of 9:07 hours was consumed between discharge intimation to handover to patient and on an average 5:07 hours time has been taken between discharge intimation to room preparation for the next patient. Minimum turnaround time of 18 minutes has been recorded for updation of billing card on floor and its receipt at IP billing.

Keywords-- Discharge planning, discharge process, discharge order, discharge intimation, turnaround time

I. INTRODUCTION

Discharge from the hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge involves the medical instructions that the patient will need to fully recover (Walz *et al.*, 2011). Discharge planning is a routine feature of health systems in many countries. The aim of discharge planning is to reduce hospital length of stay and unplanned

readmission to hospital, and to improve the co-ordination of services following discharge from hospital. Discharge planning may lead to increased satisfaction with healthcare for patients and professionals. Discharge planning is the development of a personalized plan for each patient who is leaving hospital, with the aim of containing costs and improving patient outcomes. Discharge planning should ensure that patients leave hospital at an appropriate time in their care and that, with adequate notice, the provision of post discharge services will be organized (Gonçalves-Bradley DC, 2016). The problems concerning hospital discharges are of a number of different types, these include discharges that:

- occur too soon
- are delayed
- are poorly managed from the patient/carer perspective
- are to unsafe environments (Mourad *et al.*, 2011).

Discharge from hospital is a process and not an isolated event. It should involve the development and implementation of a plan to facilitate the transfer of an Individual from hospital to an appropriate setting. The individuals concerned and their carer(s) should be involved at all stages and kept fully informed by regular reviews and updates of the care plan. Planning for hospital discharge is part of an ongoing process that should start prior to admission for planned admissions, and as soon as possible for all other admissions. This involves building on, or adding to, any assessments undertaken prior to admission.

The key principles for effective discharge and transfer of care are ...

1. Unnecessary admissions are avoided and effective discharge is facilitated by whole system approach to assessment processes and the commissioning and delivery of services.
2. The engagement and active participation of individuals and their career(s) as equal partners is central to the

delivery of care and in the planning of a successful discharge.

3. Discharge is a process and not an isolated event. It has to be planned for at the earliest opportunity across the primary, hospital and social care services, ensuring that individuals and their carer(s) understand and are able to contribute to care planning decisions as appropriate.

4. The process of discharge planning should be co-ordinated by a named person who has responsibility for co-ordinating all stages of the 'patient journey'. This involves liaison with the pre-admission case co-ordinator in the community at the earliest opportunity and the transfer of those responsibilities on discharge;

5. Staff should work within a framework of integrated multidisciplinary and multi-agency team working to manage all aspects of the discharge process

6. Effective use is made of transitional and intermediate care services, so that existing acute hospital capacity is used appropriately and individuals achieve their optimal outcome.

7. The assessment for and delivery of continuing health and social care is organized so that individuals understand the continuum of health and social care services, their rights and receive advice and information to enable them to make informed decisions about future (Department of Health, Health and Social Care Joint Unit, 2003).

The process of discharge planning should be co-ordinate by a named person who has responsibility for coordinating all stages of the 'patient journey'. This involves liaison with the pre-admission case co-ordinator in the community at the earliest opportunity and the transfer of those responsibilities on discharge; staff should work within a framework of integrated multidisciplinary and multi-agency team working to manage all aspects of the discharge process; effective use is made of transitional and intermediate care services, so that existing acute hospital capacity is used appropriately and individuals achieve their optimal outcome; the assessment for, and delivery of, continuing health and social care is organized so that individuals understand the continuum of health and social care services, their rights and receive advice and information to enable them to make informed decisions about their future care (Dalal *et al.*, 2011).

The benefits of effective discharge planning are for the patient

- Needs are met.
- Able to maximize independence.
- Feel part of the care process, an active partner and not disempowered.
- Do not experience unnecessary gaps or duplication of effort.
- Understand and sign up to the care plan.
- Experience care as a coherent pathway, not a series of unrelated activities.

- Believe they have been supported and have made the right decisions about their future.

For the carer(s)

- Feel valued as partners in the discharge process.
- Consider their knowledge has been used appropriately.
- Are aware of their right to have their needs identified and met.
- Feel confident of continued support in their caring role and get support before it becomes a problem.
- Have the right information and advice to help them in their caring role.
- Are given a choice about undertaking a caring role.

For the staff

- Feel their expertise is recognized and used appropriately.
- Receive key information in a timely manner.
- Understand their part in the system.
- Can develop new skills and roles.
- Have opportunities to work in different settings and in different ways.
- Work within a system which enables them to do so effectively.
- For organizations.
- Resources are used to best effect.
- Service is valued by the local community.
- Staff feel valued which, in turn, leads to improved recruitment and retention.
- Meet targets and can therefore concentrate delivery system (Department of Health, Health and Social Care Joint Unit, 2003).

Thus, the present study had been planned to observe and analyze the discharge process flow of inpatients in multispecialty hospital of Ludhiana.

II. METHODOLOGY

The present study has been carried out on 270 discharged patients from different wards to study the discharge process timings in a multispecialty hospital of Ludhiana. Various timings including discharge intimation time, billing card submission time, drugs clearance time, pharmacy clearance time, final bill intimation time, final bill clearance time, final summary time, handover time, vacancy of room and time taken for preparation of room for next patient were recorded for each patient to study actual time taken at each step from discharge order to the physical room vacancy by the patient.

III. RESULTS AND DISCUSSION

The total time taken during discharge process has been calculated by recording the following timings:

1. TAT 1 : Discharge intimation to billing clearance
2. TAT 2 : Discharge intimation to final summary
3. TAT 3 : Discharge intimation to room vacancy
4. TAT 4 : Discharge intimation to drug clearance
5. TAT 5 : Discharge intimation to consumables clearance
6. TAT 6 : Discharge order to discharge intimation
7. TAT 7 : Discharge intimation to room prepared for next
8. TAT 8 : Discharge intimation to hand over to patient
9. TAT 9 : Final summary signed to hand over to patient
10. TAT 10 : Billing clearance to hand over to patient
11. TAT 11 : Billing card updated on floor to receive at IP billing
12. TAT 12 : Room vacancy to room prepared for next patient

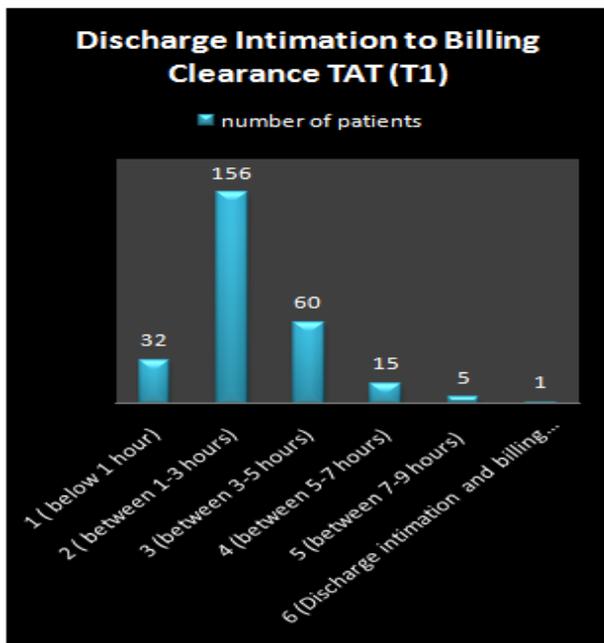


Figure 1: Total Time Taken during Discharge intimation to billing clearance

The total time taken during discharge intimation to billing clearance is calculated as the time gap between the discharge intimation to bill clearance by patient. It is observed from figure 1 that the time taken for maximum no. of patients i.e. 156 is 1-3 hrs for billing clearance followed by 60 patients with total time between 3-5 hrs, for 32 patients it has been found to be below one hour, for 15 patients it is between 5-7 hrs, for 5 patients the total time taken during discharge intimation to billing clearance is between 7-9 hrs and only 1 patient is having discharge intimation and bill clearance at the same time while there is another one patient whose discharge intimation was after bill clearance. Thus, the maximum number of patients i.e. 156 patients had total time gap between discharge intimation to billing clearance of 1-3 hrs and minimum no. of patients i.e. 1 patients had discharge intimation and bill clearance at same time (Figure 1).

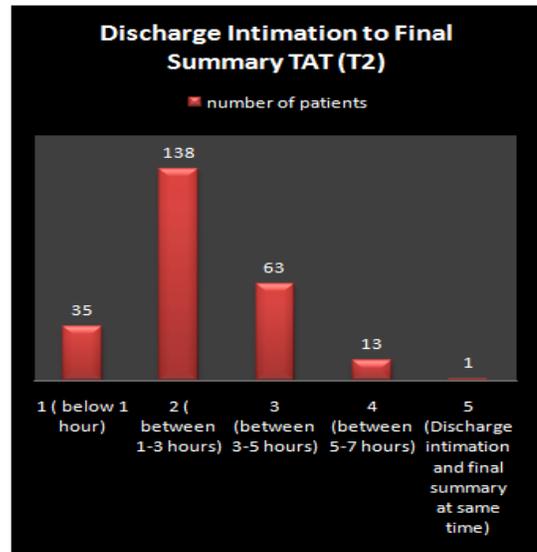


Figure 2: Total Time Taken during Discharge intimation to final summary

The total time taken during discharge intimation to final summary is calculated as the time gap between the discharge intimation to final summary signed by doctor. It is observed from figure 2 that the total time gap between discharge intimation to final summary for maximum no. of patients i.e. 138 is 1-3 hrs followed by 63 patients with total time between 3-5 hrs, for 35 patients it has been found to be below one hour, for 13 patients it is between 5-7 hrs and only 1 patient is having discharge intimation and final summary at the same time. And no of patients on brief is 7 and patients with advance summary is 13. Thus, the maximum number of patients i.e. 138 patients had total time gap between discharge intimation to final summary of 1-3 hrs and minimum no. of patients i.e. 1 patients had discharge intimation and final summary at the same time (Figure 2).

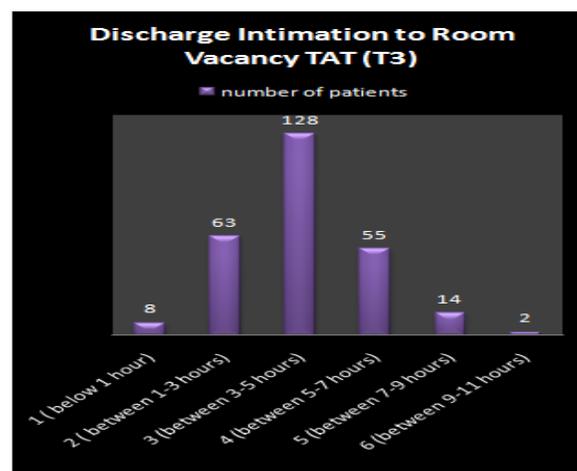


Figure 3: Total Time Taken during Discharge intimation to room vacancy

The total time taken during discharge intimation to room vacancy is calculated as the time gap between the discharge intimation to physical vacancy of room by patient. It is observed from figure 3 that the total time gap between discharge intimation to room vacancy for maximum no. of patients i.e. 128 is 3-5 hrs followed by 63 patients with total time between 1-3 hrs, for 55 patients it has been found to be 5-7 hrs, for 14 patients it is between 7-9 hrs, for 8 patients it is below 1 hour and for only 2 patients it is between 9-11 hrs. Thus, the maximum number of patients i.e. 128 patients had total time gap between discharge intimation to room vacancy of 3-5 hrs and minimum no. of patients i.e. 2 patients had the total time gap of 9-11 hrs between discharge intimation and room vacancy (Figure 3).

The total time taken during discharge intimation to drugs clearance time is calculated as the time gap between the discharge intimation to drugs cleared by IP Pharmacy. It is observed from figure 4 that the total time gap between discharge intimation to drug clearance for maximum no. of patients i.e. 105 is below 1 hour followed by 8 patients with total time between 1-3 hrs while 4 patients had discharge intimation and drug clearance at the same time. For 3 patients it is found to be 3-5 hrs, for 1 patient it is between 5-7 hrs and for another 1 patient it is between 7-9 hrs. 51 patients had no return and 97 patients had late discharge intimation. Thus, the maximum number of patients i.e. 105 patients had total time gap between discharge intimation to drug clearance of below 1 hour and minimum no. of patients i.e. 1 patient had the total time gap of 5-7 hrs and another 1 patient had total time gap of 7-9 hrs between discharge intimation and drug clearance (Figure 4).

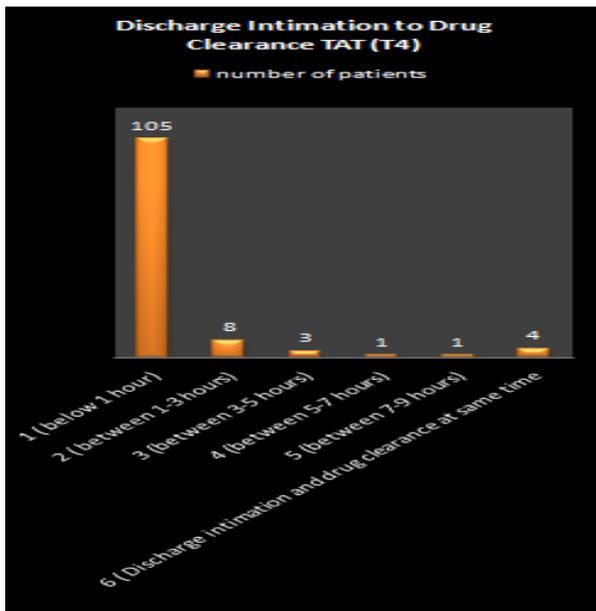


Figure 4: Total Time Taken during Discharge intimation to drug clearance

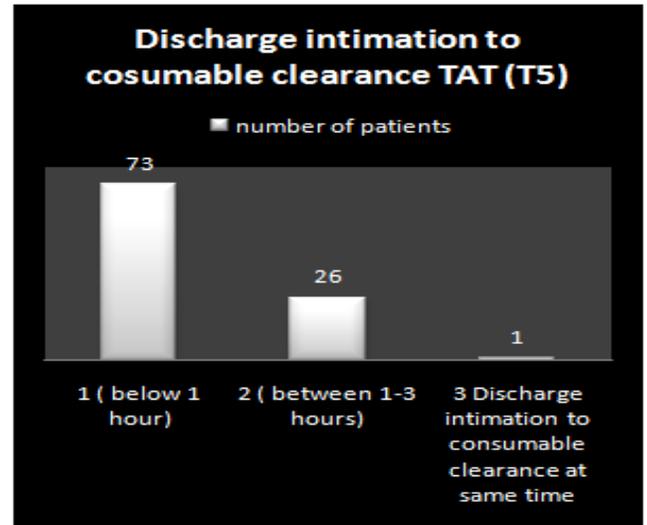


Figure 5: Total Time Taken during Discharge intimation to consumables clearance

The total time taken during discharge intimation to consumables clearance time is calculated as the time gap between the discharge intimation to consumables cleared by surgical store. It is observed from figure 5 that the time taken for maximum no. of patients i.e. 73 is below 1 hour followed by 26 patients with total time between 1-3 hrs, while only 1 patient had discharge intimation and consumable clearance at the same time. 68 patients had no return and 102 patients had late discharge intimation. Thus, the maximum number of patients i.e. 73 patients had total time gap between discharge intimation to consumable clearance below 1 hr and minimum no. of patients i.e. 1 patient had discharge intimation and consumable clearance at the same time (Figure 5).

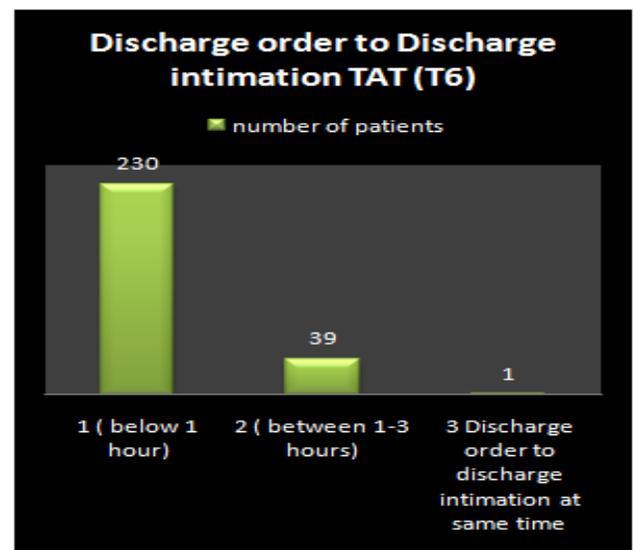


Figure 6: Total Time Taken during Discharge order to Discharge intimation

The total time taken during discharge order to discharge intimation time is calculated as the time gap from discharge order to discharge intimation. It is observed from figure 6 that the time taken for maximum no. of patients i.e. 230 is below 1 hour followed by 39 patients with total time between 1-3 hrs, while only 1 patient had discharge intimation and discharge order at the same time. Thus, the maximum number of patients i.e. 230 patients had total time gap between discharge intimation to discharge order below 1 hr and minimum no. of patients i.e. 1 patient had discharge intimation and discharge order at the same time (Figure 6).

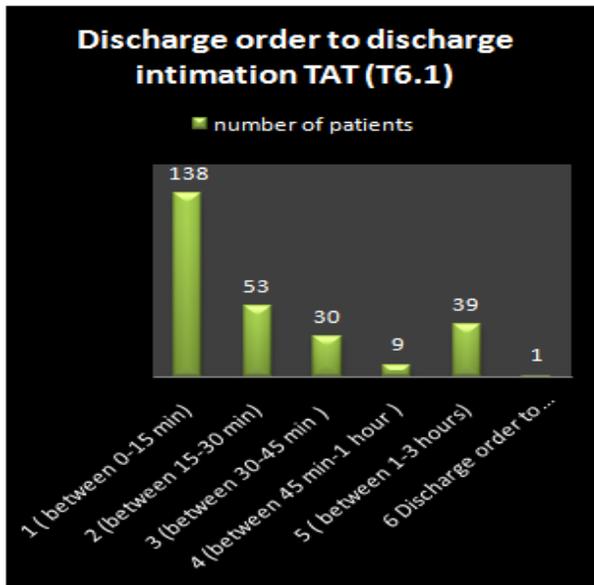


Figure 6.1 : Total Time Taken during Discharge order to Discharge intimation

The total time taken during discharge order to discharge intimation time is calculated as the time gap from discharge order to discharge intimation. It is observed from figure 6.1 that time taken from discharge order to discharge intimation time for maximum no. of patients i.e 138 within 0 – 15 mins followed by 53 patients between 15 mins- 30 mins. The time taken is observed between 30 – 45 mins for 30 patients, time taken for 9 patients is between 45 min - 1 hr, time taken for 39 patients is between 1-3 hrs. while only 1 patient had discharge intimation and discharge order at the same time. Thus, the maximum number of patients i.e. 230 patients had total time gap between discharge intimation to discharge order below 1 hr and minimum no. of patients i.e. 1 patient had discharge intimation and discharge order at the same time (Figure 6.1).

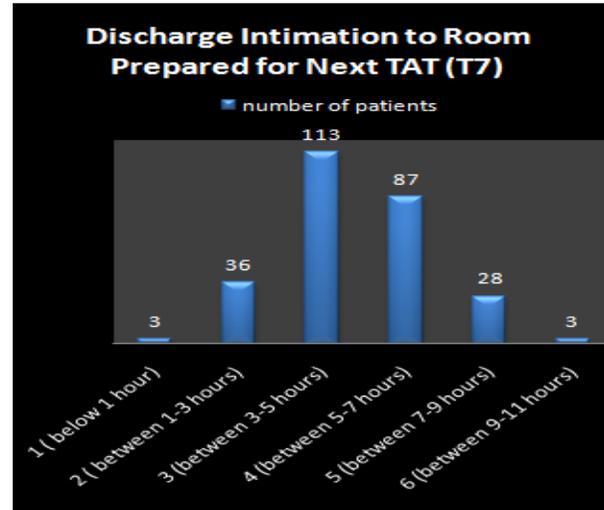


Figure 7: Total Time Taken during Discharge intimation to room prepared for next patient

The total time taken during discharge intimation to room prepared for next patient is calculated as the time gap from discharge order to room prepared for next patient. It is observed from figure 7 that the total time gap between discharge intimation to room prepared for the next for maximum no. of patients i.e. 113 is between 3-5 hrs followed by 87 patients with total time between 5-7 hrs while for 36 patients it is between 1-3 hrs, for 28 patients it is between 7-9 hrs, for 3 patients it is found to be below 1 hour, and for another 3 patients it is between 9-11 hrs. Thus, the maximum number of patients i.e. 113 patients had total time gap between discharge intimation to room prepared for next of 3-5 hrs and minimum no. of patients i.e. 3 patients had the total time gap of 9-11 hrs and another 3 patients had total time gap of below 1 hour between discharge intimation and room prepared for the next (Figure 7).

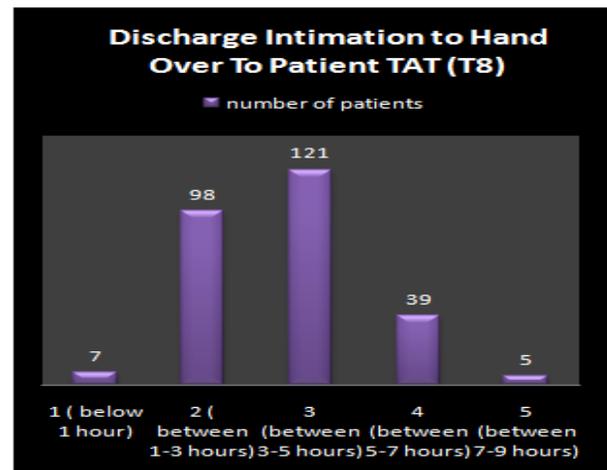


Figure 8: Total Time Taken during Discharge intimation to handover to patient

The total time taken during discharge intimation to handover to patient is calculated as the time gap from discharge intimation to complete handover to patient. It is observed from figure 8 that time taken for maximum no of patients i.e. 121 (between 3-5 hrs) from discharge intimation to handover to patient followed by 98 patients (between 1-3 hrs),39 (between 5-7 hrs) 5 patients (between 7-9 hrs) ,7 patients (below 1 hr) . The maximum time taken is observed between 3-5 hrs for 121 patients and minimum time taken is below 1 hr for 7 patients (Figure 8).

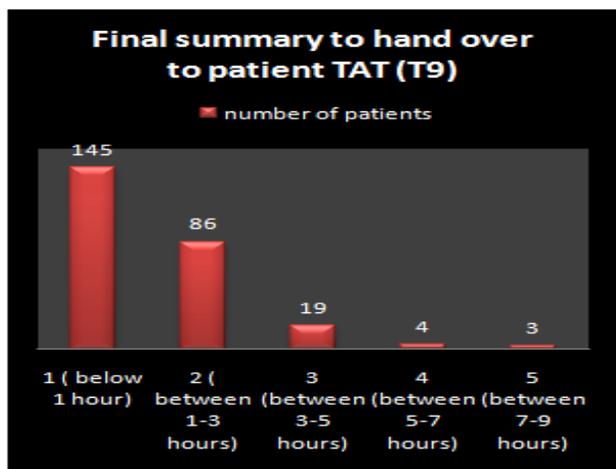


Figure 9: Total Time Taken during Final summary to handover to patient

The total time taken during final summary to handover to patient is calculated as the time gap from final summary ready to complete handover to patient. It is observed from figure 9 that time taken for maximum no of patients i.e. 145 (below one hr) followed by 86 patients (between 1-3 hrs),19 (between 3-5 hrs) 4 patients (between 5-7 hrs) ,3 patients (between 7- 9 hrs). The maximum time taken is between 7-9 hrs for 3 patients and minimum time taken is below 1 hr for 145 patients. Total no of patients on brief summary were 7 and 6 patient’s summary signed after handover was given to patient (Figure 9).

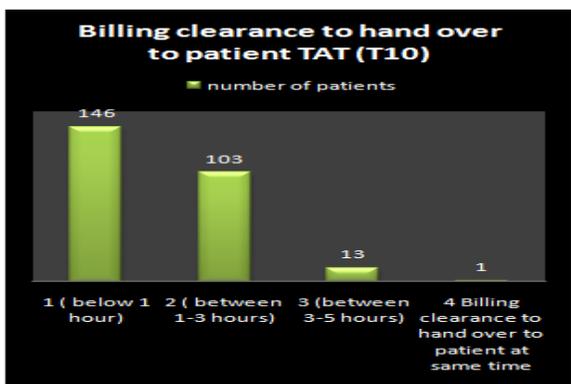


Figure 10: Total Time Taken during billing clearance to handover to patient

The total time taken during billing clearance to handover to patient is calculated as the time gap from bill clearance to complete handover to patient. It is observed from figure 10 that time taken for maximum no of patients i.e. 146 (below one hr) followed by 103 patients (between 1-3 hrs),13 (between 3-5 hrs) and only 1 patient had same time from billing clearance to handover to patient. The maximum time taken is between 3-5 hrs for 13 patients and minimum time taken for only one patient having same bill clearance time and handover time. Advance Handover was given to 7 patients before their bill clearance (Figure 10).

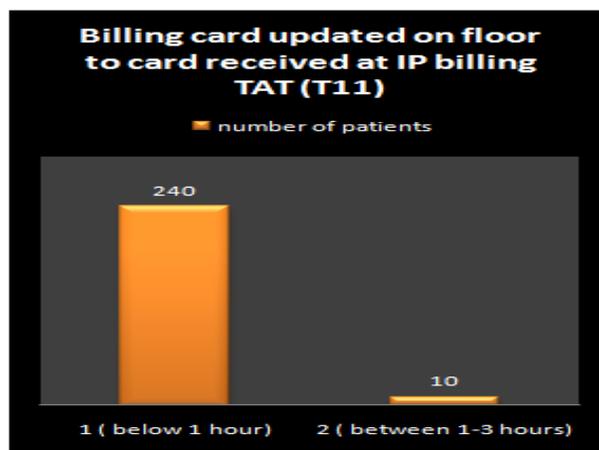


Figure 11: Total Time Taken during billing card updation to billing card received at IP billing

The total time taken during billing card updation to billing card received at IP billing is calculated as the time gap from billing card updation on floors to billing card received at IP billing. It is observed from figure 11 that time taken for maximum no of patients i.e. 240 (below one hr) followed by 10 patients (between 1-3 hrs). The maximum time taken is observed between 1-3 hrs for 10 patients and minimum time taken for 240 patients is below one hr. There was no time mentioned in register for 20 patients in IP billing (Figure 11).

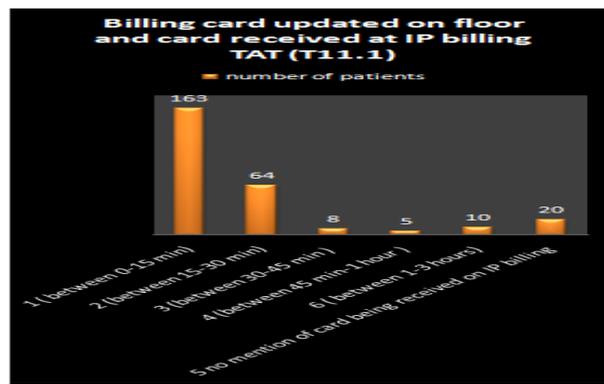


Figure 11.1: Total Time Taken during billing card updation to billing card received at IP billing

The total time taken during billing card updation to billing card received at IP billing is calculated as the time gap from billing card updation on floors to billing card received at IP billing. It is observed from figure 11.1 that time taken for billing card updation on floors to billing card received at IP billing for maximum no of patients i.e 163 within 0 – 15 mins followed by 64 patients between 15 mins- 30 mins. . The time taken is observed between 30 – 45 mins for 8 patients , time taken for 5 patients is between 45 min - 1 hr , time taken for 10 patients is between 1-3 hrs. There was no time mentioned in register for 20 patients in IP billing (Figure 11.1).

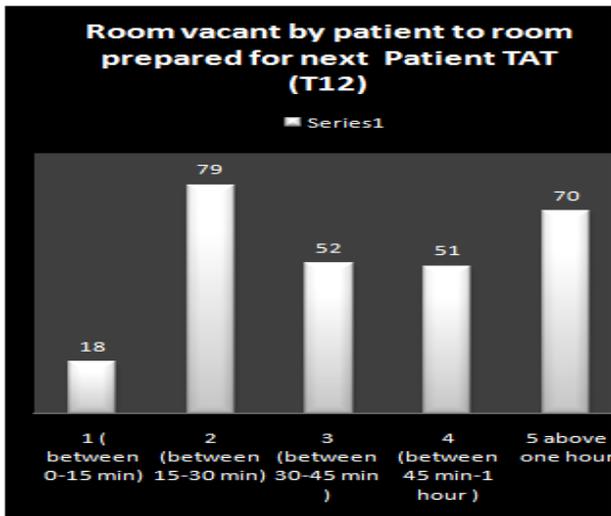


Figure 12: Total Time Taken from room vacancy by patient to room prepared for next patient

The total time taken from room vacancy by patients to room prepared for next patient by Housekeeping deptt. is calculated as the time gap from physical vacancy of room by patient to room preparation for next patient by housekeeping department. It is observed from figure 12 that time taken for maximum no of room preparation for next patient after the physical vacancy of room by patient i.e for 79 within 15 – 30 mins followed by 70 patients above 1 hr . The time taken is observed between 30 – 45 mins for 52 patients, time taken for 51 patients is between 45 min - 1 hr, time taken for 18 patients is between 0 mins - 15 mins (Figure 12).

IV. AVERAGE TURN AROUND TIME

TAT(T1-T12) - Average time
T1) Discharge intimation to billing clearance - 02:30 h
T2) Discharge intimation to final summary - 02:29 h
T3) Discharge intimation to room vacancy - 04:05 h

T4) Discharge intimation to drug clearance - 00:37 m
T5) Discharge intimation to consumables clearance - 00:44 m
T6) Discharge order to discharge intimation - 00:28 m
T7) Discharge intimation to room prepared for next - 05:07 h
T8) Discharge intimation to hand over to patient - 09:07 h
T9) Final summary signed to hand over to patient - 01:17 h
T10) Billing clearance to hand over to patient - 01:06 h
T11) Billing card updated on floor to receive at IP billing - 00:18 m
T12) Room vacancy to room prepared for next patient - 01:02 h

V. CONCLUSIONS

The present study results showed that TAT 7 i.e. average time between Discharge intimation to room prepared for next patient and TAT 8 i.e. Discharge intimation to hand over to patient have large average time (5:07 hrs and 9:07 hrs respectively) due to extreme values, both large and small values discrepancies are seen in preparations of handovers, so does the average differs. An average turn around time of 4:05 hrs has been observed between discharge intimation and room vacancy by the patient.

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