



A study on Turnaround Time of patients in Emergency department

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DEFINITION

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- “In the department examined, Turnaround Time is defined as the time from patient arrival to either discharge or hospitalization” Walrath JM, Maguire JM (2004)
 - Turnaround Time (TAT) for Emergency department is taken as the time from patient arrival to either bed allotment or discharge as reflected in the system.



RESEARCH QUESTION

- ▶ What is the Turnaround Time of patients in Emergency department at Max Hospital, Vaishali?
 - ▶ What are the reasons for prolonged Turnaround time ?
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➤ **AIM:** To study the Turnaround time (TAT) of patients in Emergency Department of Max Superspeciality Hospital, Vaishali

➤ **OBJECTIVES:**

- To study the process flow of emergency department
- To determine the TAT of patients at ER.
- To perform a gap analysis of the process.

METHODOLOGY

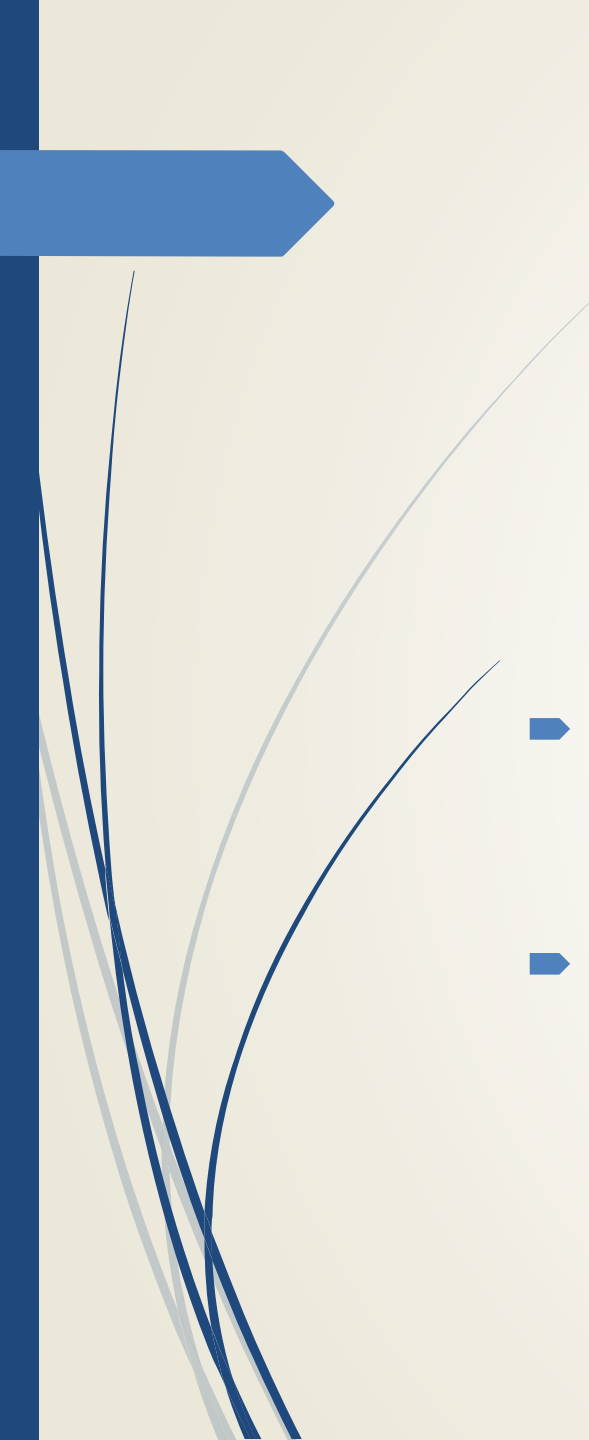
- ▶ **Study design:** A Prospective Observational Study was conducted at Max Superspeciality Hospital, Vaishali
- ▶ **Study duration:** The study was carried out for a period of 3 months (February 6, 2017- May 5, 2017)
- ▶ **Study area:** Emergency Department at Max Superspeciality Hospital, Vaishali

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- **Sampling technique:** Convenient sampling
 - **Sample size:** A total of 172 patients were observed during the study.
 - **Data collection method:**
 - Primary data collection: Direct observation and recording the findings in a customised ER list. Information was also collected by discussion with the ER staff.
 - Secondary data collection from Hospital Information System and ER register.



The data was captured as per the following parameters:

- In time: The time when the patient arrives at the Emergency department.
 - Attended by EMO: The time when the patient is seen by the Emergency Medical Officer.
 - Consultant (Call Time): The time at which the consultant from the concerned department was informed about the patient.
 - Consultant (Review): The time at which the consultant reviews the patient in ER.
 - Admission/ Discharge advice given by doctor: The time at which the doctor fills the admission request form and hands it over to nursing for further processing
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- Admission time/ Discharge time : The time of giving admission or discharge (as reflected in the system)
 - Shifting/ Discharge time: The time at which the patient moves out physically from the Emergency Department. (either for admission or discharge)
 - **Inclusions:** Patients arriving at the emergency department between the working hours (9am-6pm)
 - **Exclusions:**
 - Patients arriving at the emergency before 9am and after 6pm
 - Brought dead cases
 - Patients who died during the treatment in ER

➤ Study Tools Used:

- Observational study was used to understand the processes in Emergency department.
- Statistical analysis Data was done using Microsoft excel to calculate The Turnaround Time of the patients in the Emergency Department as well as to calculate the delay in moving out the patient from the ER (shifting to ward/ ICU/ OT or discharge)

Turnaround Time (TAT) = Admission time (also k/a bed allotment time) – Patient In time

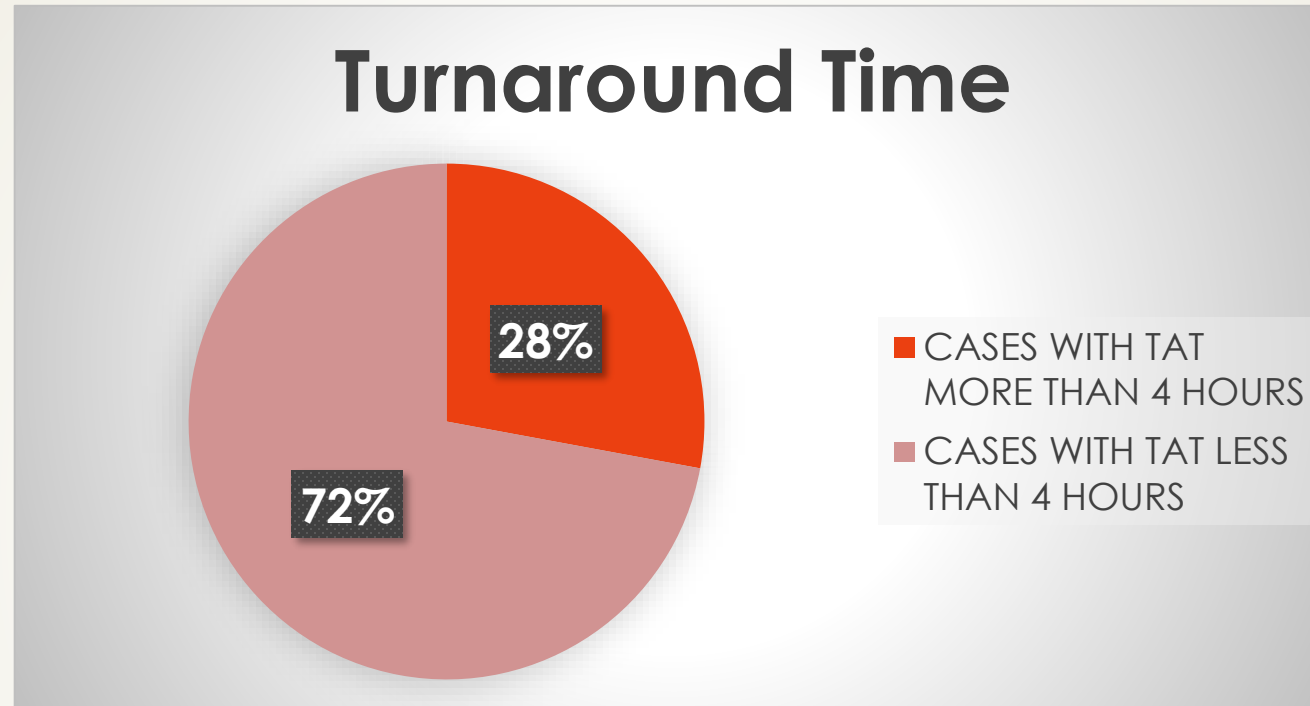
Delay in shifting the patients= Physical shifting time from Emergency Department- Admission time



RESULTS

- ▶ Average Turnaround time = 3:09 hours.
 - ▶ Average Turnaround time of delayed cases= 6 hours
 - ▶ Average time for delay in physical shifting of the patient= 45 minutes.
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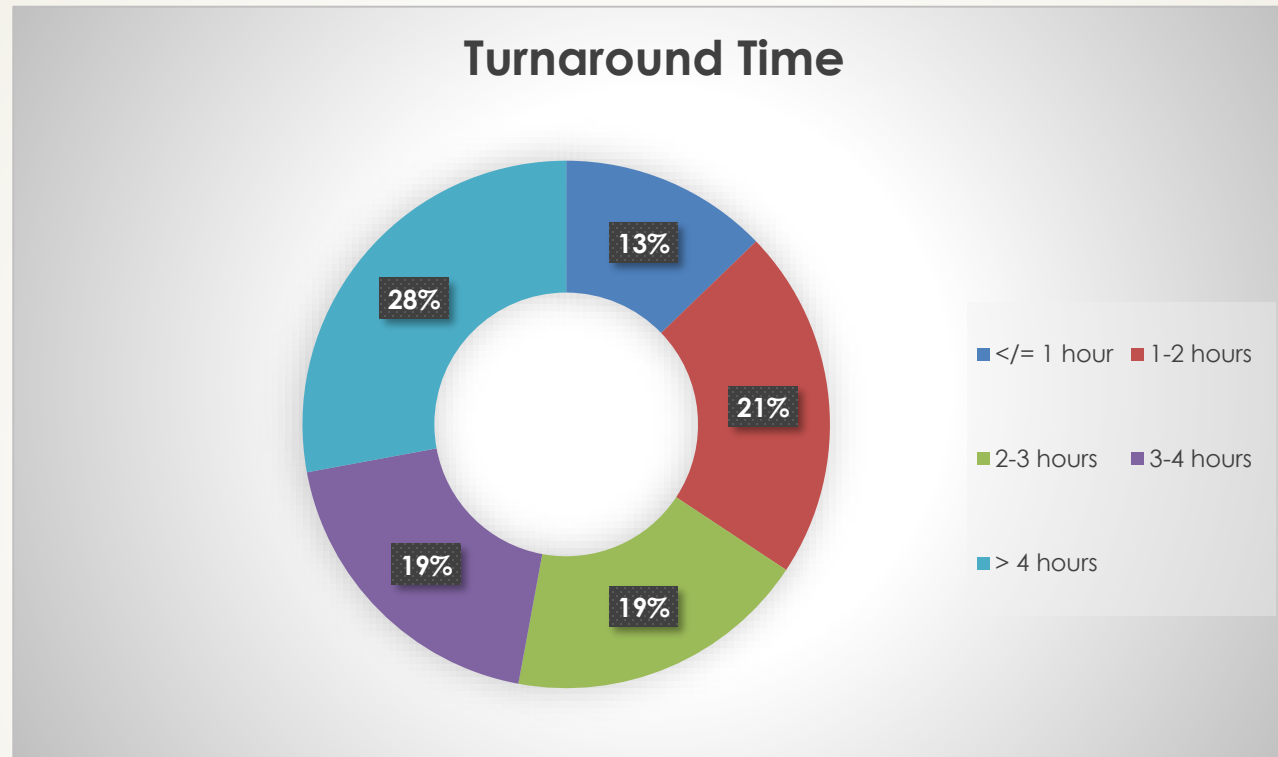
Percentage distribution of cases according to Turnaround Time:



The Turnaround time for all 172 cases was calculated and compared against a benchmark of 4 hours.

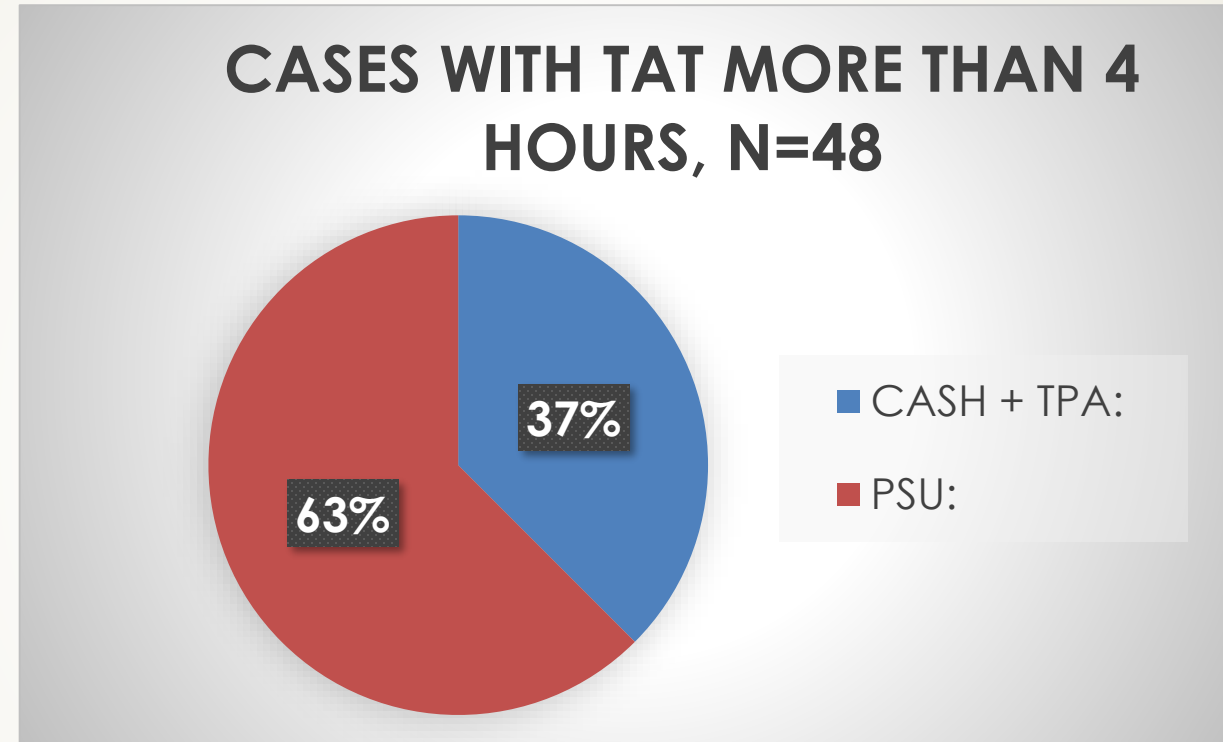
- 48 cases (i.e. 28%) recorded a TAT of more than 4 hours with an average TAT of 6 hours i.e. a delay of 2 hours
- While 124 cases (i.e. 72%) recorded a TAT of less than 4 hours.

Overall distribution of Turnaround time



- It was observed that only 13% of the patients had a TAT of less than 1 hour i.e. they were either admitted or discharged within 1 hour.
- On the other hand, 28% of the patients experienced a turnaround time of more than 4 hours in the Emergency Department.

Percentage distribution of delayed cases according to category



Of all the cases with a delay in TAT above 4 hours:

- Cash and TPA cases were 18 (63%)
- PSU cases were 30 (63%)

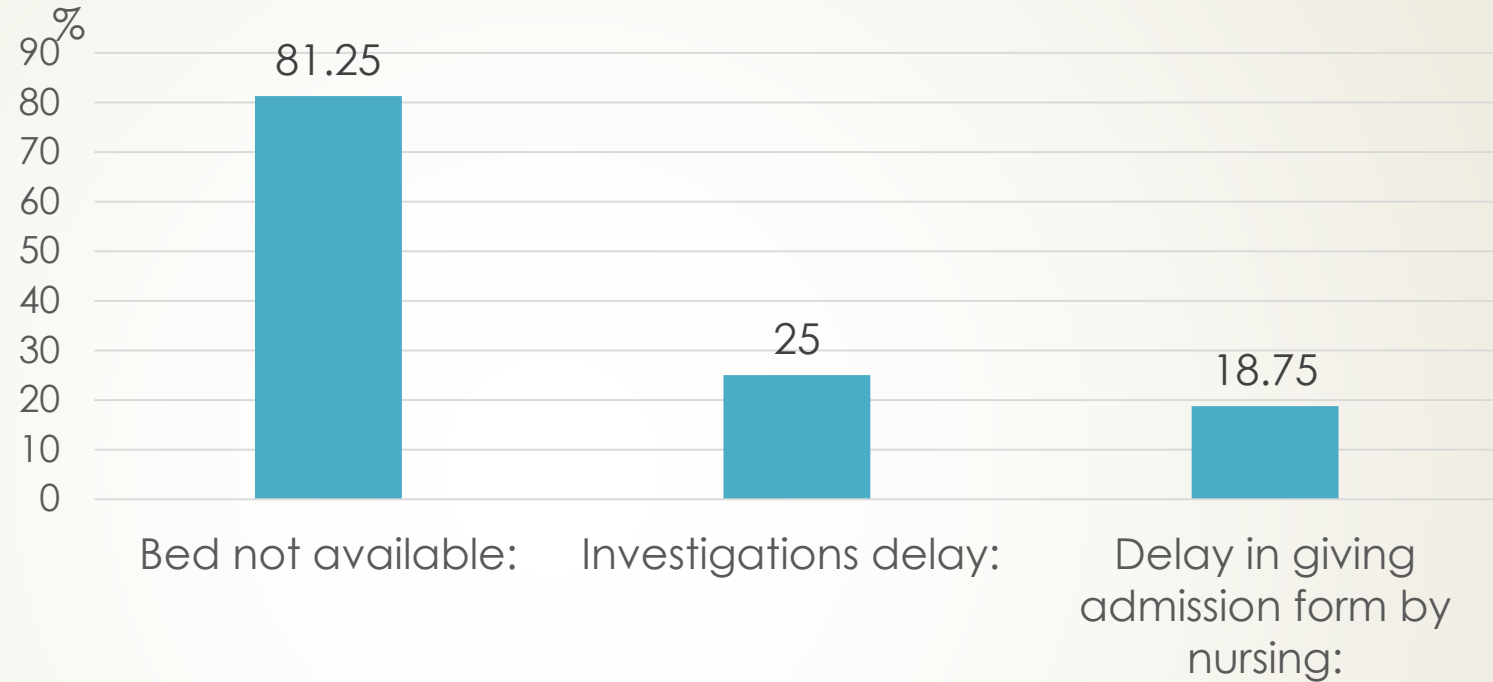
➤ **EMO TAT:**

- All patients in the ER should be attended within 5 minutes of arriving by the Emergency Medical Officer.
- In this study, all the patients were attended by the Emergency Doctor within an average of 8 minutes.

➤ **CONSULTANT TAT:**

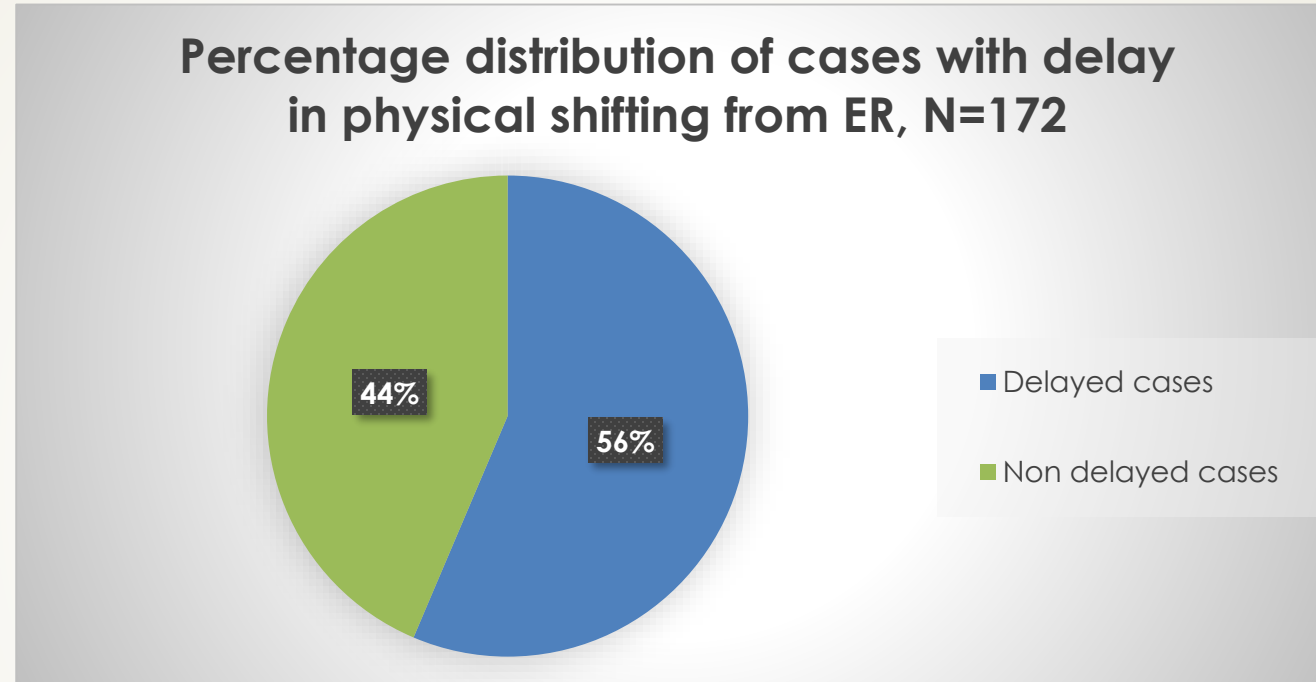
- Average consultant TAT: **18 minutes**
- The average turnaround time for consultant review was 18 minutes which was within the TAT benchmark of 30 minutes.

Reasons for prolonged Turnaround Time:



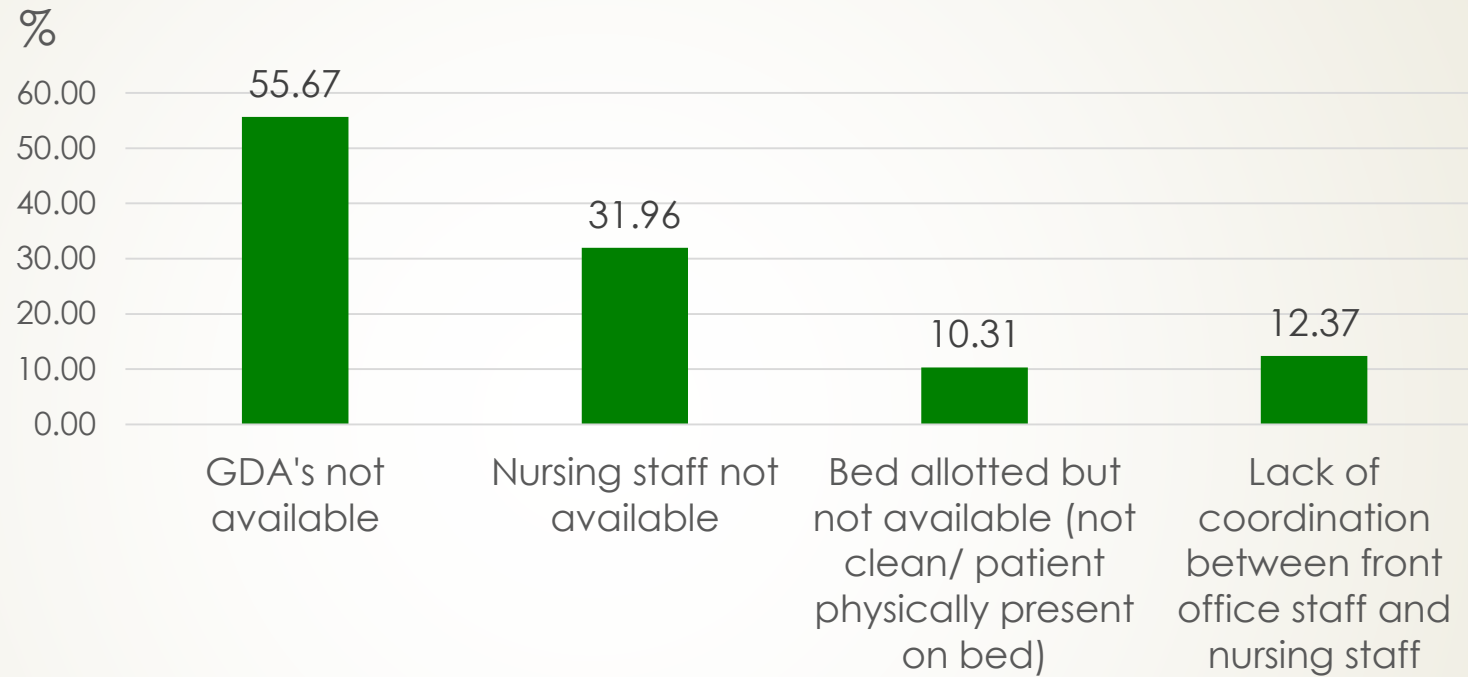
- The main reason causing a delay in shifting of the patients from ER to ICU/ wards was the non-availability of beds which constituted 81% of the causes. A delay in the discharge process directly impacted the availability of beds due to which the patients had to wait in the ER causing overcrowding.
- While a delay in investigations also lead to an increased TAT in every one out of four cases.

Reasons for delay in physical shifting of the patients



97 cases out of a total of 172 reported a delay in physical shifting of the patient from ER. (Time taken to shift the patient was more than 20 minutes).

Reasons for delay in physical shifting of the patients

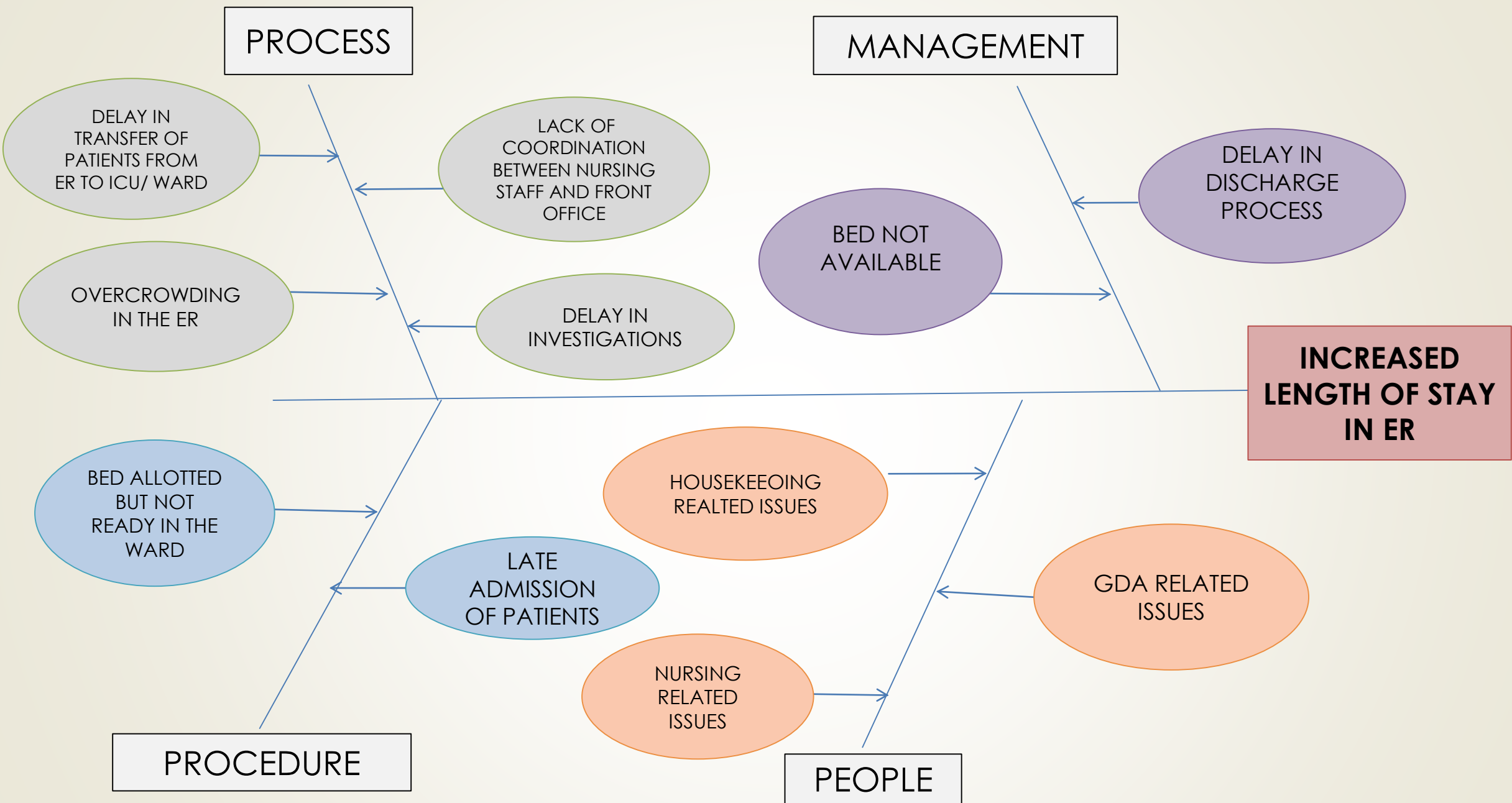


- In approximately 56% of cases, non-availability of GDAs was observed as one of the major cause for delay in patient transfer.

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- Approximately, 32% of the delays were caused due to nursing related issues. A time interval where the nursing shifts were changed and handover took place, was identified as the period where nurses were not available to shift patients. Also, as every nurse had been allotted 2-3 beds, so while one patient was shifted, it did cause a delay in shifting the other patient of the same nurse.
 - In 10 % of the cases, bed was allotted but was not available as it was not clean or in some cases the patient was physically present on the bed.
 - Lack of coordination between the front office staff and the nursing staff was observed in approximately 12% of the cases. (Delay in communication between admission department and nursing staff). Many times the bed was allotted but admission department delayed in informing the ER nurses.



CAUSE AND EFFECT DIAGRAM





LIMITATIONS:

- Patients in ER, only during the duty hours, were observed for the study.
 - Patients arriving before 9am and after 6pm could not be taken into consideration.
 - Sundays and public holidays were excluded during the study.
 - No questionnaire was designed to record the view of clinicians and staff.
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CONCLUSION:

Turnaround time is an effective indicator to measure ER performance. Our data suggests that patients presenting to the ER had long waiting times due to various reasons. Causes that delayed the Turnaround time of patients in ER were non-availability of beds, delay in investigations and communication failure between nursing and the front office staff. While other reasons like GDA, nursing and housekeeping related issues further delayed the shifting of patient from ER, leading to an increase in the length of stay for patients. Addressing these factors would decrease the TAT to an optimum level.



RECOMMENDATIONS

- Admission lounge should be provided for the patients to be admitted. This will help in vacating the beds in Emergency without causing patient discomfort.
- Fast track discharge process with prompt action form floor coordinators.
- Regular trainings conducted for the staff.
- Time for physical shifting of the patient should be noted in the HIS.
- On bed allotment, a notification should be reflected in the system at nurse station, so as to avoid any delay in shifting patient.
- Integration of HIS on doctor's smart phone showing the patient's parameters and Investigations

BIBLIOGRAPHY

- Day Alison, Oldroyd Carol, Attempting to reduce the maximum Emergency waiting time to 4 hours in England: Was the Initiative successful? *J Emerg Nurs* 2012;38:383-5.
- Guttman A, Schull MJ, Vermeulen MJ, et al. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. *BMJ* 2011;342:D2983. doi:10.1136/bmj.d2983
- Walrath JM, Tomallo-Bowman R, Maguire JM. Emergency Department: Improving Patient Satisfaction. *Nurs Econ.* 2004;22:71–74.
- Rodi SW, Grau MV, Orsini CM. Evaluation of a fast track unit: alignment of resources and demand results in improved satisfaction and decreased length of stay for emergency department patients, *Qual Manag Health Care.* 2006 Jul-Sep;15(3):163–170.
- Spaite DW, Bartholomeaux F, Guisto J, et al. Rapid process redesign in a university-based emergency department: Decreasing waiting time intervals and improving patient satisfaction. *Annals of Emergency Medicine*, 2002 Feb;39(2):168–177.

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- ▶ Spaite DW, Bartholomeaux F, Guisto J, et al. Rapid process redesign in a university-based emergency department: Decreasing waiting time intervals and improving patient satisfaction. *Annals of Emergency Medicine*, 2002 Feb;39(2):168–177.
 - ▶ Johnson KD, Winkelman C. The effect of emergency department crowding on patient outcomes: a literature review. *Adv Emerg Nurs J* 2011;33:39–54.
 - ▶ Fernandes CM, Price A, Christenson JM. Does reduced length of stay decrease the number of emergency department patients who leave without seeing a physician?, *J Emerg Med*, 1997 May-Jun;15(3):397–399.



THANK YOU