

SUMMER TRAINING REPORT

**A COMPARATIVE STUDY ON THE TURN AROUND TIME FROM
PATIENT ADMISSION IN THE WARD TILL THE CHEMOTHERAPY
DRUG ADMINISTRATION**

AT MEDANTA, THE MEDICITY, GURGAON

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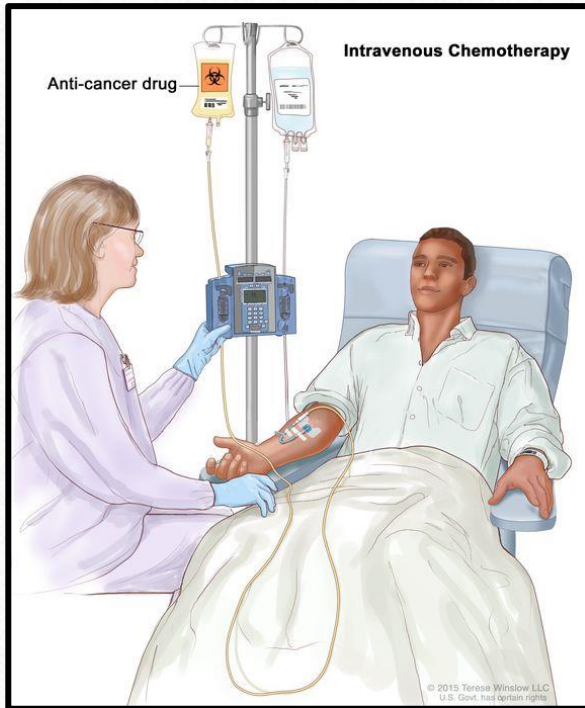
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ABOUT CANCER



- Cancer is condition in which some cells in the **body grow out of control and spread** to other parts of the body.
- Cancerous tumors, also known as **malignant tumors**, **spread to neighboring tissues** and can move to distant parts of the body, forming new tumors. This is referred as as metastasis.
- **Solid tumors**, such as Breast Cancer, are a solid mass of cancer cells that can occur anywhere in the body and grow in organ systems.
- **Liquid tumors** occur in the blood, bone marrow or lymph nodes and include types of Leukemia, Lymphoma and Myeloma.

ABOUT CHEMOTHERAPY

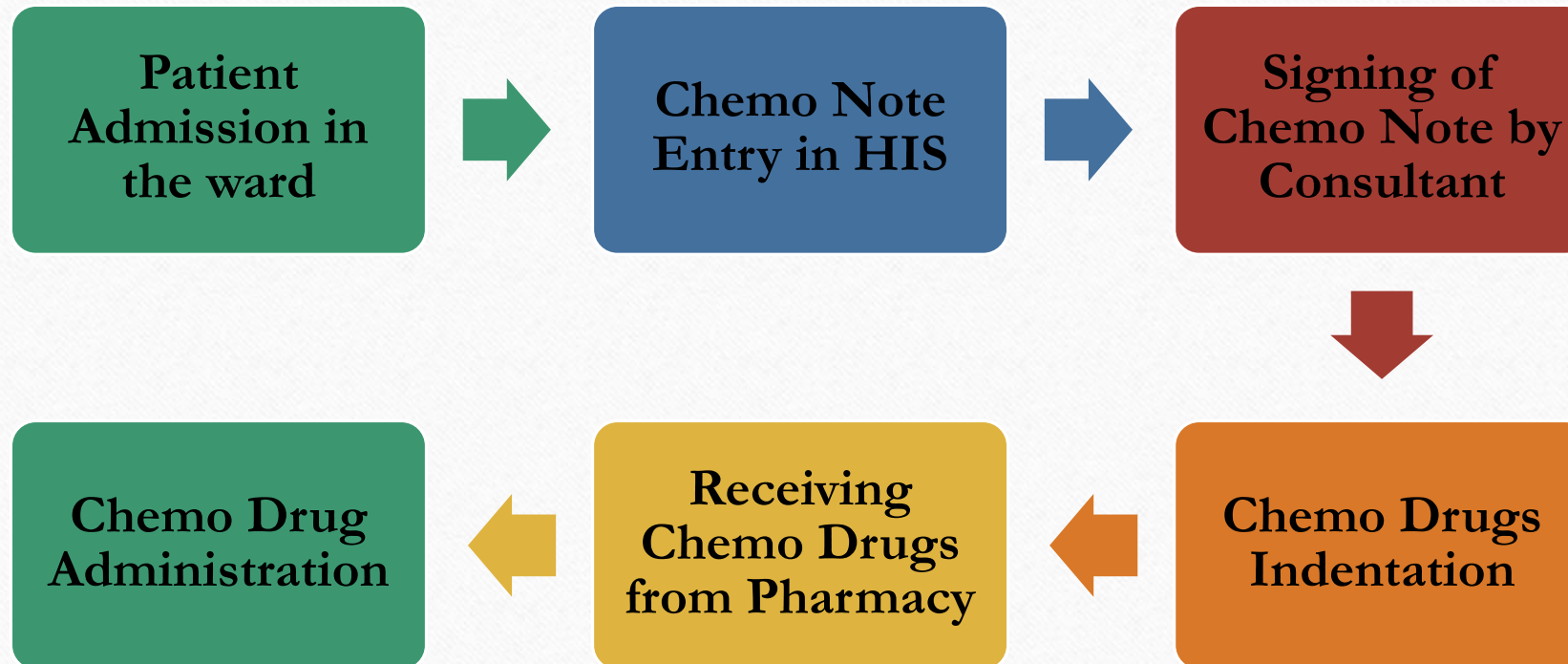


- Chemotherapy works by reducing or preventing the rapid development and division of cancer cells.
- Chemotherapy is used to treat cancer, reduce the risk of it returning, or delay its progression.
- Chemotherapy can also be used to reduce the size of tumors that are causing pain or other symptoms.

Chemotherapy can work with other treatments such as:

- Reduce
- Destroy
- Assist
- Kill

PROCESS FLOW OF CHEMOTHERAPY PATIENTS IN MEDICAL ONCOLOGY AND HEMATOLOGY DEPARTMENT (INPATIENT)



RESEARCH QUESTION



1. What are the reasons for delay in chemotherapy drugs administration?
2. How has the turnaround time changed after taking necessary actions?

OBJECTIVES

1. To analyze the steps involved in chemotherapy administrations and compare them with the expected turnaround time
2. To identify the gaps leading to the delay in chemo drug administration
3. To find out areas of improvement in the chemotherapy administration process
4. To compare the turnaround time after taking the necessary steps

METHODOLOGY

- **Study area:** Medanta, The Medicity, Gurgaon
- **Study Design:** A prospective, observational time motion study was conducted in the in-patient department in Medanta, The Medicity from May 13,2021 to June 12, 2021
- **Sampling Unit:** Patient getting admitted to the inpatient department for chemotherapy
- **Sample Size:** 150 patients sample size was taken to detect the gaps in the chemo process and 100 patients was taken to identify the changes in the turnaround time of chemo process
 - **Defined a problem:** 11.05.2021 to 12.05.2021
 - **Measurement of data:** 13.05.2021 to 29.05.2021 and 2.06.2021 to 12.06.2021
 - **Analyzed the data:** 13.06.2021 to 24.06.2021
 - **Inclusion Criteria:** All the patients admitted in the ward for their first or subsequent chemo sessions
 - **Exclusion Criteria:** Day care chemo patients
 - **Sampling Technique:** The sampling technique used was Random Sampling

SPECIFIC PROJECT FINDINGS:

Time from patient admission till chemo
drug administration

3 hours 52 minutes



During the study period, 150 patients received chemotherapy medications, and the average time from patient admission to chemotherapy delivery for patients on their first cycle was **3 hours and 52 minutes.**

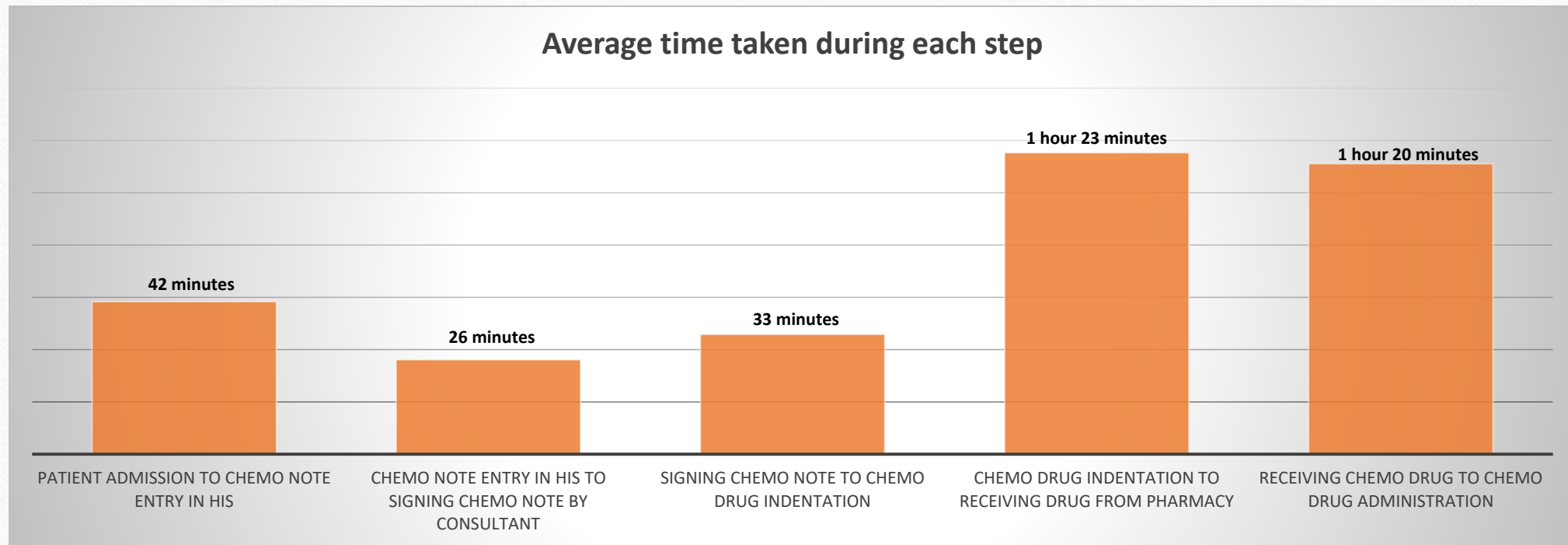
Time from chemo note entry in HIS to
chemo drug administration

3 hours 29 minutes



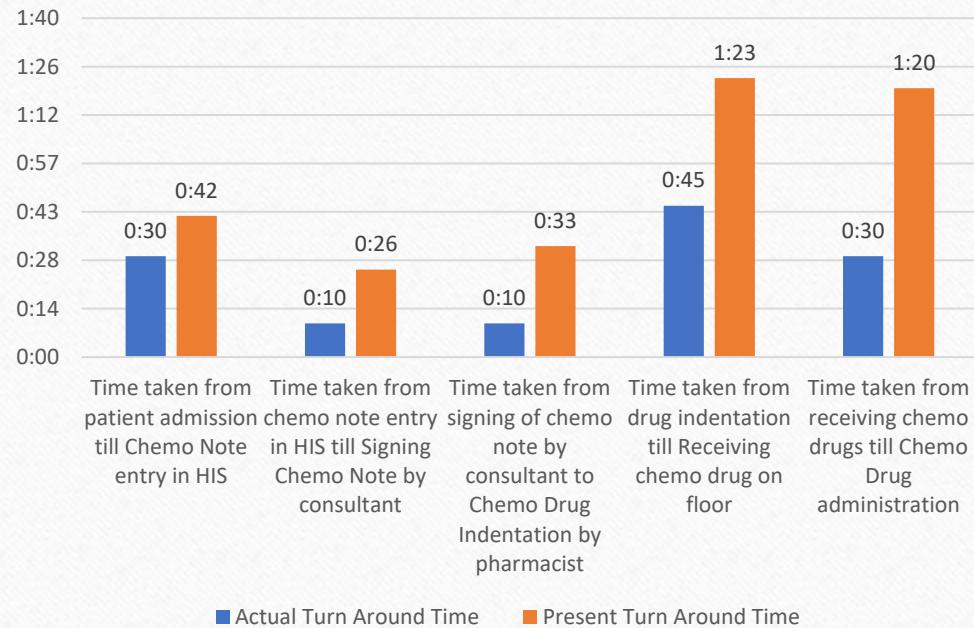
For patients admitted for various chemotherapy cycles, the average time from entering a chemo note in HIS to administering chemotherapy drug is **3 hours 29 minutes**

AVERAGE TIME TAKEN DURING EACH STEP



DATA ANALYSIS AND INTERPRETATION

Difference between Actual TAT and Present TAT



Step	Actual Turn Around Time	Present Turn Around Time	Difference between actual and present TAT
Time taken from patient admission till Chemo Note entry in HIS	30 minutes	42 minutes	<u>12 minutes</u>
Time taken from chemo note entry in HIS till Signing Chemo Note by consultant	10 minutes	26minutes	<u>16 minutes</u>
Time taken from signing of chemo note by consultant to Chemo Drug Indentation by pharmacist	10 minutes	33 minutes	<u>23 minutes</u>
Time taken from drug indentation till Receiving chemo drug on floor	45 minutes	1 hour 23 minutes	<u>38 minutes</u>
Time taken from receiving chemo drugs till Chemo Drug administration	30 minutes	1 hour 20 minutes	<u>50 minutes</u>

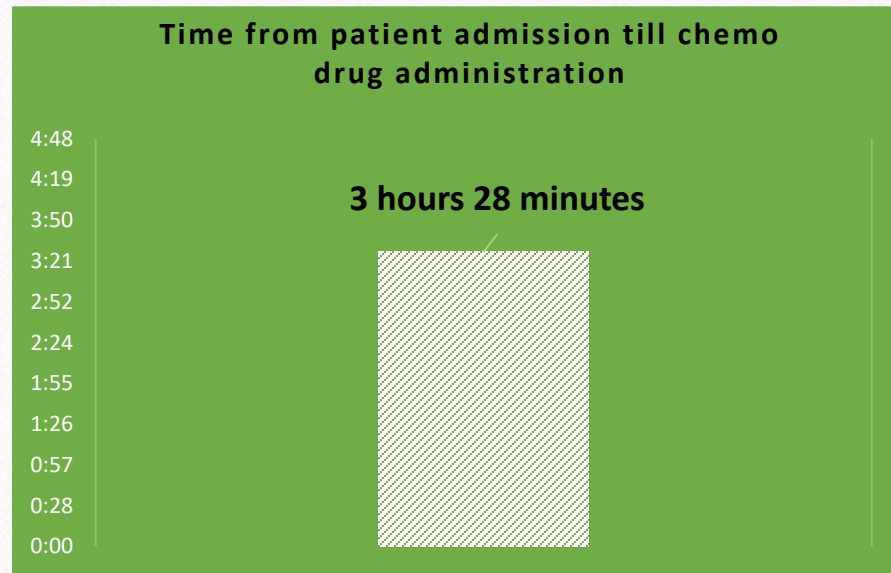
REASONS FOR DELAY

- The chemo notes were seen lying around at the counter and no GDA would be present to take the chemo note to the consultant in the OPD.
- Sometimes, due to absence of consultants in their rooms also lead to delay in chemo drug indentation in HIS.
- There was also a delay from In patient Pharmacy to send the drugs on floor on time leading to about 40 minutes delay from drug indentation to receiving of drugs.
- It was also observed that even after the TPT was present with the chemo drugs on the floor, no nursing staff was available to receive the drugs which lead to further delay in chemotherapy drug administration.

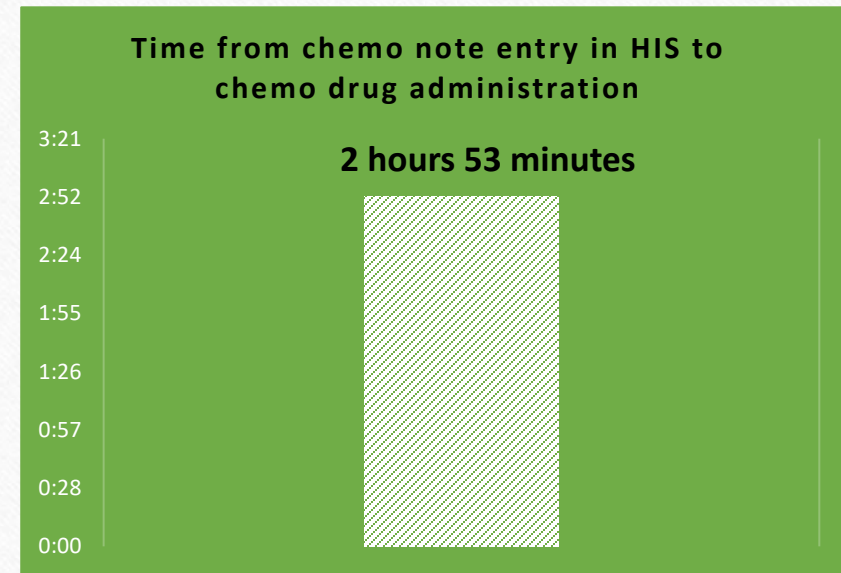
STEPS TAKEN FOR IMPROVEMENT

- The doctors were intimated well in time about the patient admission in ward.
- The entire GDA was told to keep a check at the counter so that no chemo notes were seen to be lying around, and one GDA was assigned exclusively to taking the chemo notes and getting them signed.
- The IPD pharmacy was informed of the drug delay, and the data gathered was sent to them via email so that they could inform the rest of the employees and TPT team.
- More emphasis was placed on the chemo staff receiving the drugs, so that there would be no delay between the drugs arriving on the floor and the staff receiving them so that the drugs could be administered on time.

POST IMPROVEMENT FINDINGS

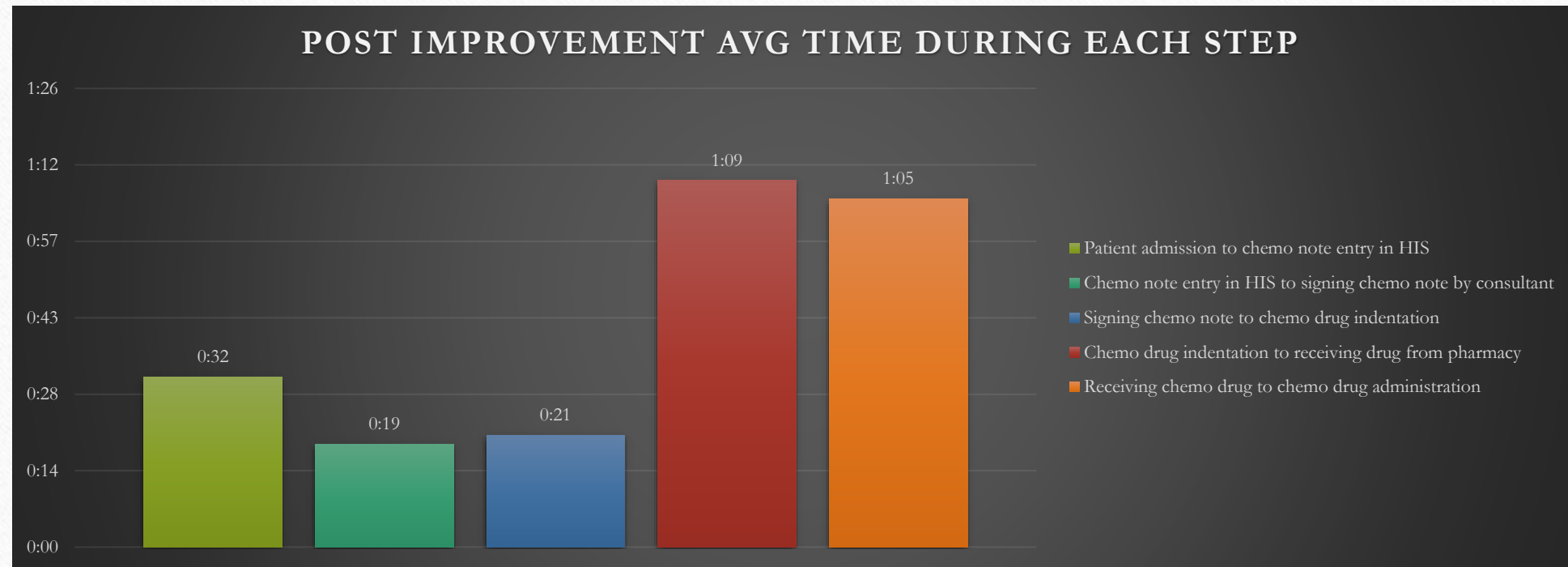


During the study period, 100 patients received chemotherapy medications, and the average time from patient admission to chemotherapy delivery for patients was **3 hours and 28 minutes**.

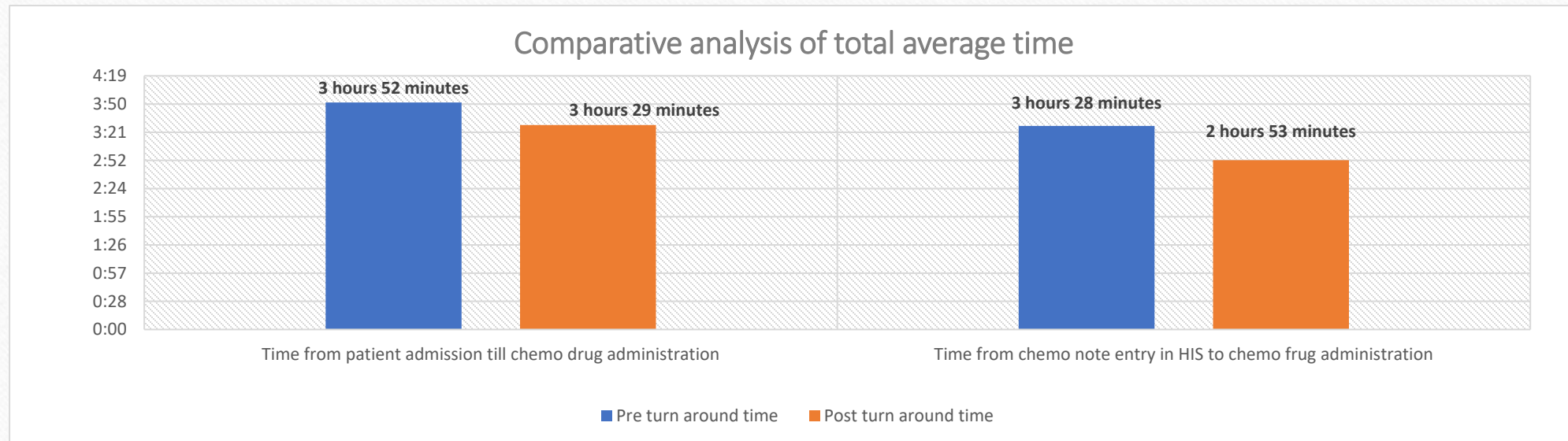


The average time from entering a chemo note in HIS to administering chemotherapy drug is **2 hours 53 minutes** for future sessions.

AVERAGE TIME TAKEN DURING EACH STEP

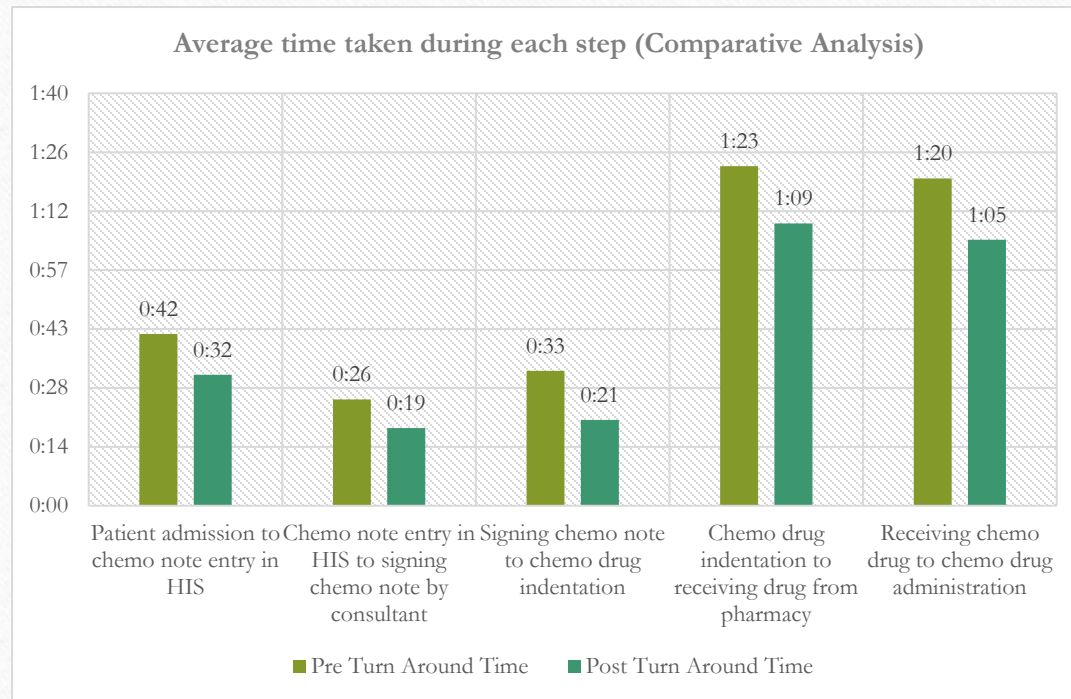


PRE AND POST COMPARATIVE ANALYSIS



The total average time taken from patient admission to chemo drug administration was reduced by about **23 minutes** for the patients getting admitted on a particular day. For patients admitted for various cycles, the total average time taken from chemo note entry in HIS to chemo drug administration was reduced by **36 minutes**.

COMPARATIVE ANALYSIS OF AVERAGE TIME TAKEN IN EACH STEP



Step	Pre-Turnaround time	Post Turn Around Time	Difference between pre and post turnaround time
Chemo Note entry in HIS	42 minutes	32 minutes	<u>10 minutes</u>
Signing Chemo Note by consultant	26minutes	19 minutes	<u>5 minutes</u>
Chemo Drug Indentation in HIS	33 minutes	21 minutes	<u>12 minutes</u>
Receiving chemo drug on floor	1 hour 23 minutes	1 hour 09 minutes	<u>14 minutes</u>
Chemo Drug administration	1 hour 20 minutes	1 hour 05 minutes	<u>15 minutes</u>

RECOMMENDATIONS

- **Separate storage area for chemo drugs:** A storage area on the floor should be developed for extra chemo drugs so that drugs can be administered to the patients well in time.
- **An IPD pharmacy on the floor:** A pharmacy on floor of Medical Oncology and Hematology department should be built so that the delay caused due to receiving of drugs from pharmacy located on the upper ground floor can be reduced thereby decreasing the TAT of chemo drug administration.

CONCLUSION

- In this study the mean time taken from patient admission to chemotherapy administration was **3 hours 52 minutes** from patient admission to chemotherapy drug administration which was later **reduced to 3 hours and 29 minutes** after taking necessary steps for improvement.
- The reason for delay was observed to be maximum due to the **delay in drugs reaching to the floor from the In-patient pharmacy** (38 minutes more than the actual TAT) and delay **by the chemo staff to administer the drugs** (50 minutes more than the actual TAT) followed by delay in chemo drug indentation mostly due to absence of GDA to pick the chemo note from the consultant's room or absence of the consultant itself.
- After doing the root cause analysis, steps for improvement were taken in order to reduce the TAT in chemo drug administration. It was observed that the **overall mean time of each step was reduced by 5 minutes to 15 minutes that led to decrease in the overall TAT by 36 minutes.**
- It can be concluded that more rigorous steps should be taken to reduce the overall turnaround time in order to avoid delay in drug administration to the patient.

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