

TURN AROUND TIME FOR LABORATORY SERVICES IN INPATIENT WARDS AT ZYDUS HOSPITALS, AHMEDABAD

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INTRODUCTION

Turn-around-time (TAT) is defined as the time from when a test is ordered until the result is reported. Each team member involved in laboratory process defines TAT in a different way.

Definitions of TAT According to the Healthcare Team Members

Team Member	Start Process	End of Process
Consultant	Prescription	Report Informed
Ward Medical officer	Online entry	Report generated
Ward Nurse	Sample Collection	Report generated
Laboratory	Sample received in laboratory	Report generated

Rapid laboratory TAT is important both from a medical and commercial point of view. The reduction in TAT will lead to increased patient satisfaction, quality of care, employee satisfaction and ultimately the hospital's revenue.

Zydus Hospitals were facing issues in initiating treatment for patients on floors as there were delay in reporting of laboratory investigations. The consultants were dissatisfied with this delay. Discharges of patients were delayed because of the delay in laboratory test reports. The hospital wanted to assess their current scenario in relation to the overall TAT of laboratory services in inpatient wards. They wanted to identify the problem areas where the delay is prominent. They wanted to calculate the time taken by phlebotomist to reach the floors for sample collection after online entry of investigation orders. Also they wanted recommendations for decreasing the time taken for pre-analysis phase of laboratory services.

OBJECTIVES

1. To understand the process map of laboratory services in inpatient wards of Zydus hospitals
2. To calculate the TAT for laboratory tests in inpatient wards
3. To identify the factors causing delay in TAT for laboratory tests
4. To develop suggestions to minimize delay in TAT for laboratory tests

METHODOLOGY

Study Design: Observational cross-sectional study

Setting: Inpatient Wards (8th, 10th, 11th, 12th, 14th and 15th floors) Zydus Hospitals, Ahmedabad

Duration of Study: April 11, 2018 – May 20, 2018

Sample Size: 160 orders

Sampling Technique: Non-probability Sampling (Convenient Sampling)

Sample Selection:

Inclusion criteria: In-patients from wards undergoing laboratory tests

Exclusion criteria: Outsourced Laboratory tests
Histopathology Tests
Microbiology Tests
Critical-care area inpatients

Data Collection: Data was collected using the following methods

Primary Data:
Direct observation
Information from employees
Information from patients

Secondary Data:
Referring to patient's files
Referring to online records (HINAI)
Referring to departmental registers

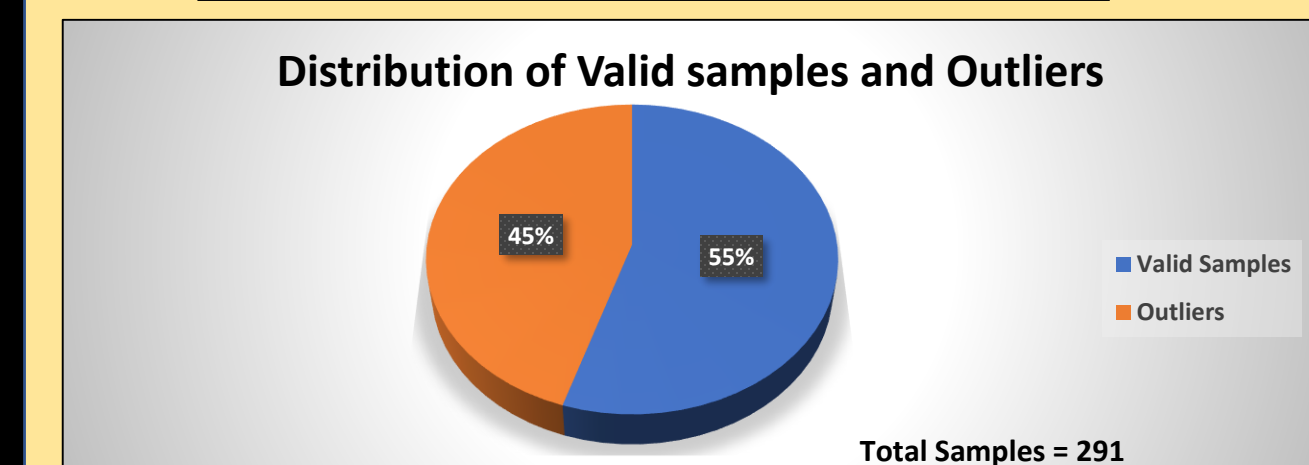
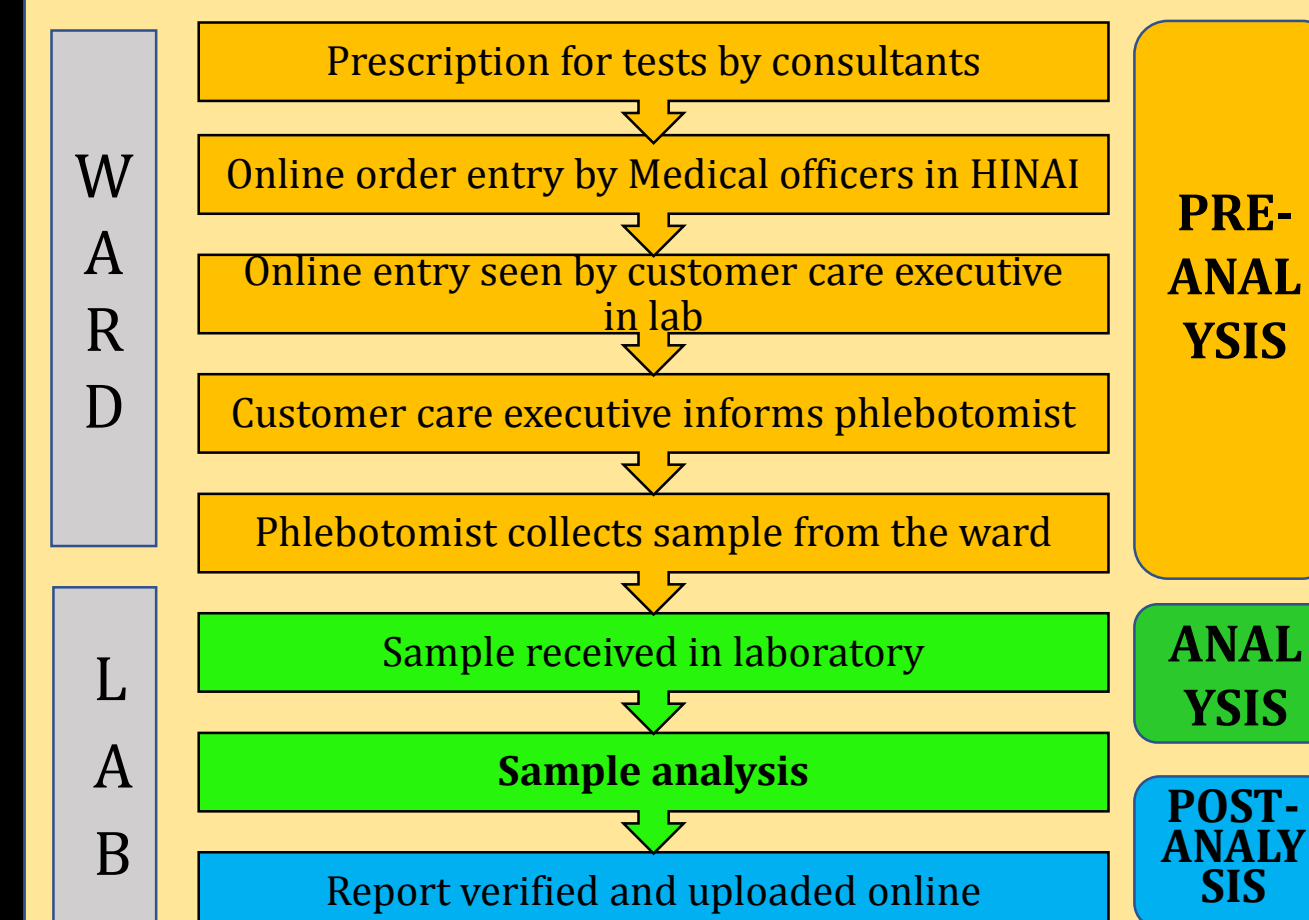
The data was collected using a data collection tool - Data sheet

Data Analysis :
Data analyzed using MS Excel and Pivot Table

Keywords: Online entry, Sample collection, Medical officer, Phlebotomist, Analysis

KEY FINDINGS

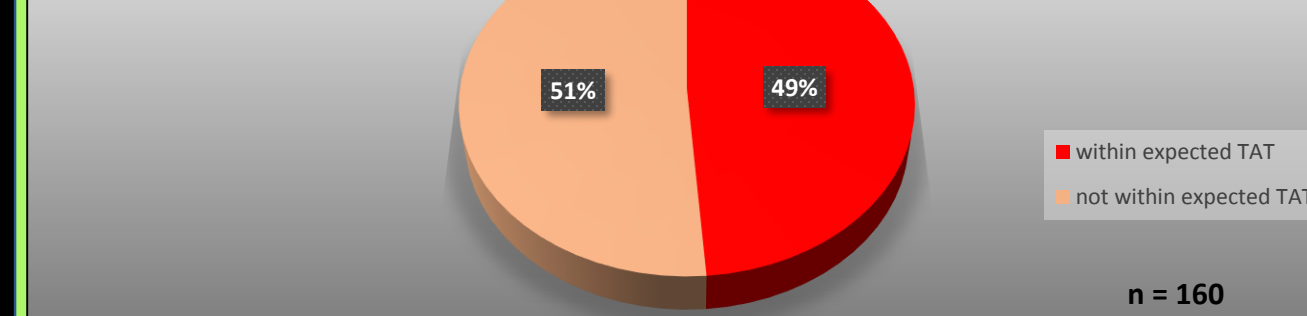
Process Mapping of Laboratory Services for In-Patient Wards



Distribution of Investigations in the Study and their Different TATs

Investigations	No. of Investigation	Average Consultant Order - Report Time	Average Online Order - Report Time	Average Sample Collection - Report Time
COAGULATION PROFILE	23	1:44	1:18	0:49
CRP	9	2:02	1:20	1:00
DIABETIC PROFILE	14	1:41	1:19	0:49
HEMATOLOGY	22	1:46	1:26	1:03
IMMUNOLOGY	3	2:55	2:44	0:53
LFT	27	2:13	1:30	0:59
RFT	42	1:54	1:32	1:03
SEROLOGY	8	2:45	2:19	1:57
BLOOD GROUPING	8	2:31	2:08	1:43
OTHERS	4	2:16	1:09	0:54

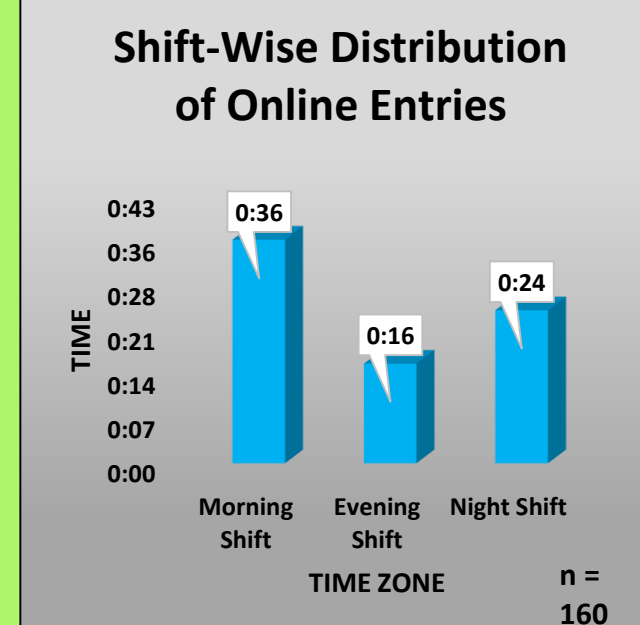
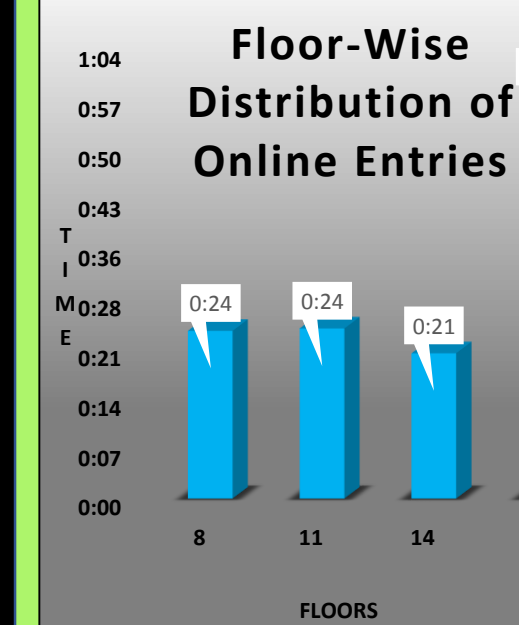
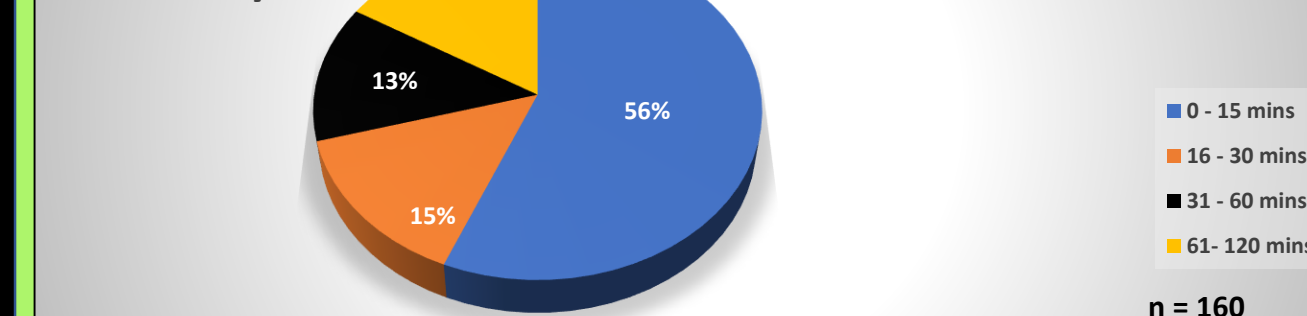
Distribution of Samples within and outside expected TAT



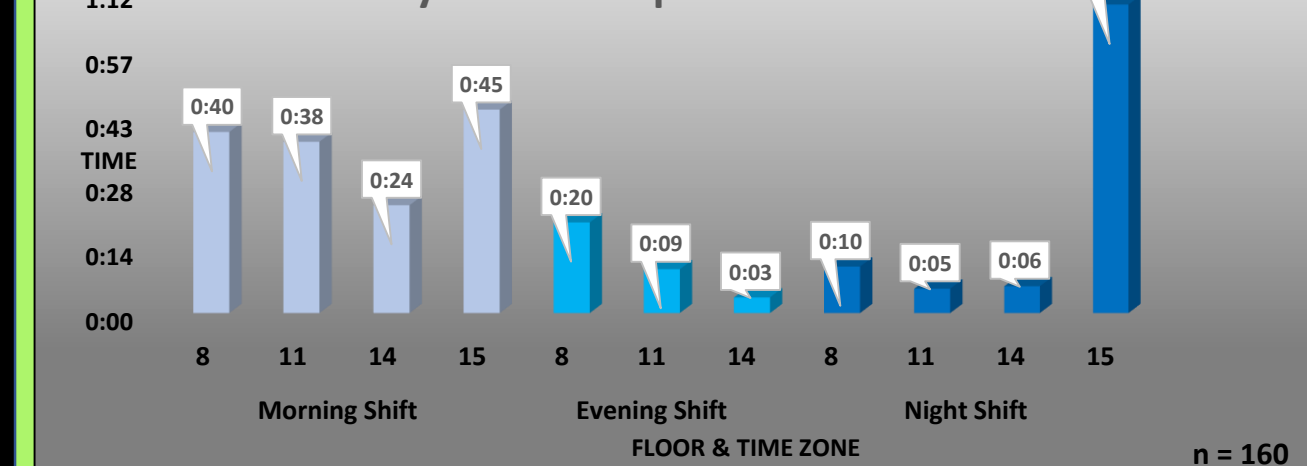
TAT for laboratory tests include three activities-

1. Time taken by the MO to make online entries after consultant's prescription
2. Time taken by the phlebotomist to collect sample after the online entry
3. Time taken from sample collection to report generation

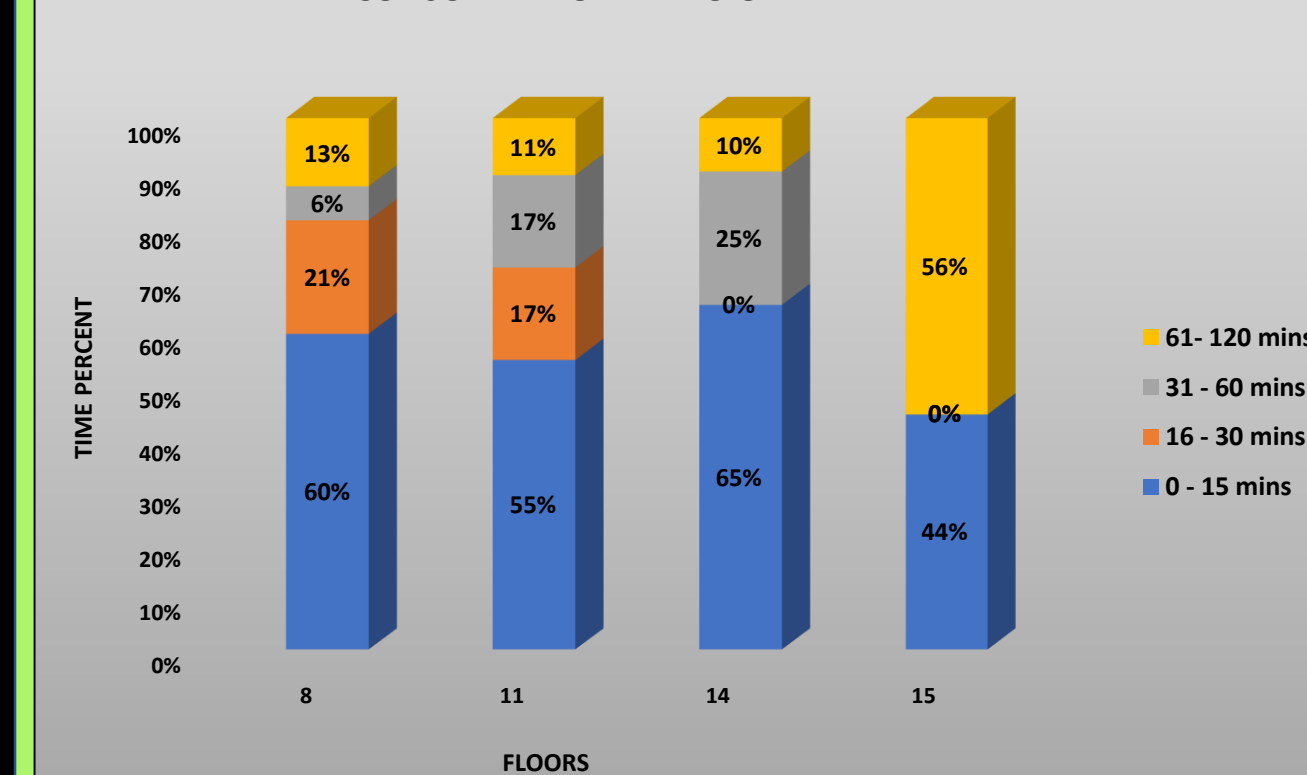
Distribution of Time taken by MO to do Online order entry



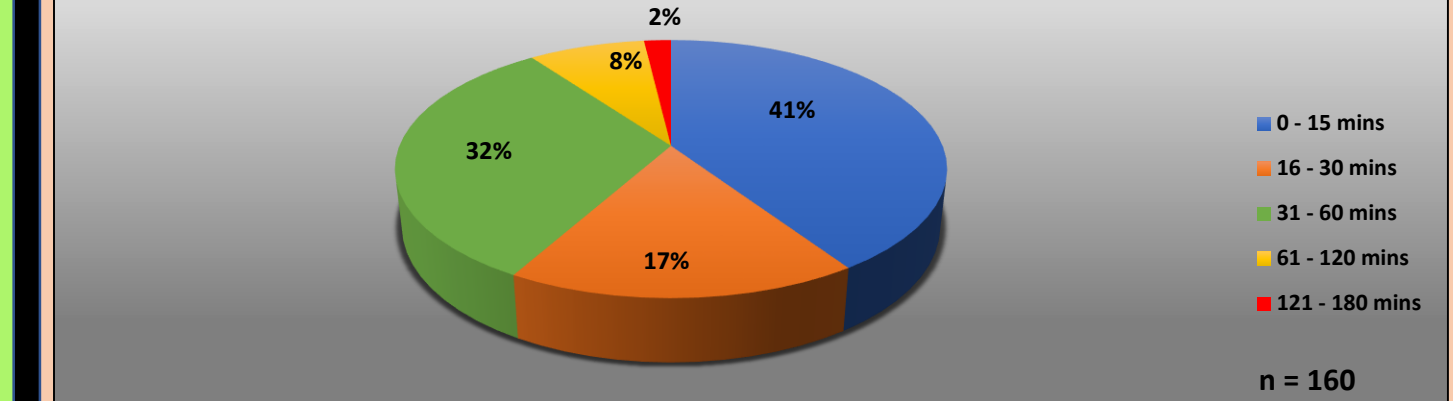
Shift-Wise Distribution of Time taken by MO to do Online Entry on each Inpatient Floor



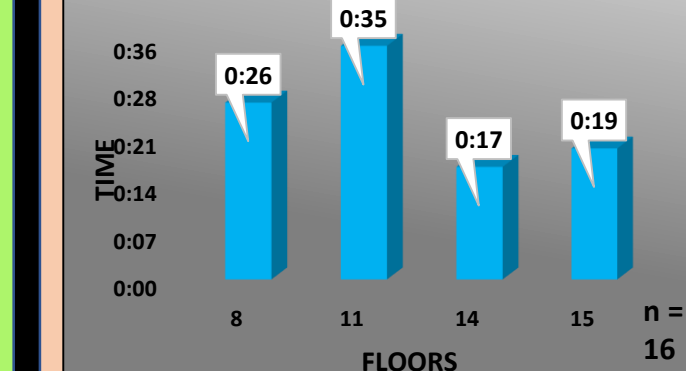
CONSULTANT ORDER TO ONLINE ENTRY TIME



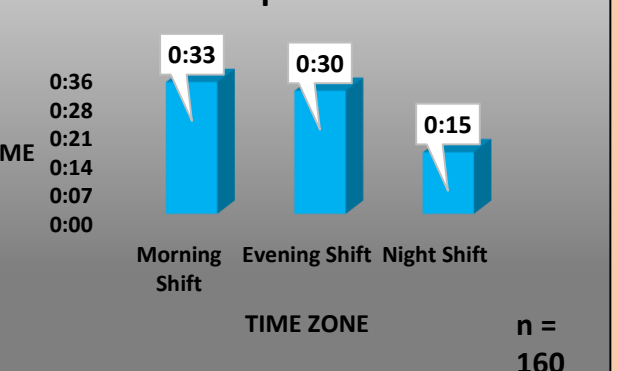
Distribution of Time Taken for Sample Collection



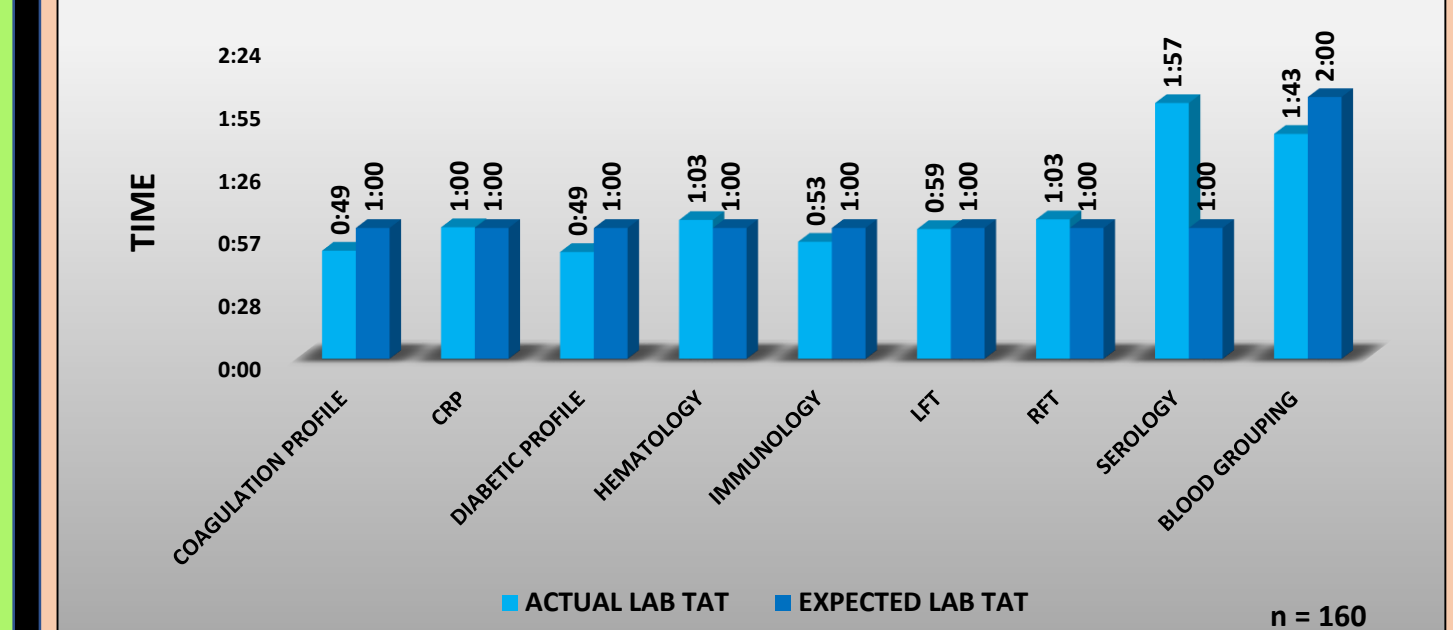
Floor wise Distribution of Time taken for Sample Collection



Shift-wise Distribution of Time taken for Sample Collection



COMPARISON OF ANALYSIS TIME OF LAB TESTS



RECOMMENDATIONS

1. To reduce the average time for online entry-
 - Provide the rights of online order entry in HINAI to sister in-charges.
2. To reduce the time taken for sample collection-
 - Allow phlebotomists to access to all the lifts to reach patient areas
 - Make optimal use of pneumatic tubes
 - Allocation of floors to phlebotomists
 - Arrange duty to make more number of phlebotomist available in morning shift
3. To reduce the time taken for analysis and post analysis-
 - The laboratory maintains the institutional standard TAT for tests.

Limitations of the Study

1. Planned investigations
2. Online entries done by MO after sample collection
3. Incomplete documentation
4. The actual time and expected time for online entry of tests could not be compared
5. The brain to brain TAT (consultants prescription to report informed) could not be calculated.