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A Study to Analyze the Turnaround Time of Selected Lab Sample Test Conducted in A Multispeciality Hospital in Vadodara, Gujarat

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Abstract: ***Quality refers to a product or service's ability to meet customer needs and expectations. Clinicians prioritize service quality, including total test error, availability, cost, relevance, and timeliness. They may sacrifice analytical quality for faster turnaround time, leading to the rise of point-of-care testing. The objective of the study was to analyze the turnaround time of selected lab sample test conducted in a multispecialty hospital.***
Materials and Methods: ***The study adopted an observational research design, analyzing data collected from a multispecialty hospital in Vadodara. A structured and validated checklist provided by the organization was used as the data collection instrument. Out of total 480 samples, 329 samples were taken for analysis.***
Results: ***Out of total 480 samples, 329 samples (78.88%) were taken for analysis. 100 (54.65%) samples were within TAT time and 83 (45.35 %) samples were delayed. 48 (57.83%) samples had TAT between 35 minutes to 40 minutes, 22 (26.51%) samples had TAT between 40 minutes to 50 minutes, 9 (10.84%) samples had TAT between 50 minutes to 55 minutes, and 4 (4.82%) samples had TAT over 60 minutes. Average time between sample collection and lab reach was observed to be 15 min. 38 sec. Transport delay was observed.***
ConclusionIn conclusion, the study emphasized the importance of timely and accurate laboratory services in ensuring patient satisfaction. By analyzing and addressing the factors contributing to delays in TAT, hospitals can improve their overall service quality and attract more patients.
Keywords: Turnaround time (TAT), Transport delay, Quality of care, Laboratory services

I. INTRODUCTION

Quality can be defined as the ability of a product or service to satisfy the needs and expectations of the customer.[1] Laboratories have traditionally restricted discussion of quality to technical or analytical quality, focusing on imprecision and inaccuracy goals. Clinicians however are interested in service quality, which encompasses total test error (imprecision and inaccuracy), availability, cost, relevance and timeliness.[2] Clinicians desire a rapid, reliable and efficient service delivered at low cost.[3] Of these characteristics, timeliness is perhaps the most important to the clinician, who may be prepared to sacrifice analytical quality for faster turnaround time (TAT).[2] This preference drives much of the proliferation of point-of-care testing (POCT) seen today.[4]

Laboratorians may disagree with such a priority, arguing that unless analytical quality can be achieved, none of the other characteristics matter.[5] Nevertheless TAT is one of the most noticeable signs of a laboratory service and is used by many clinicians to judge the quality of the laboratory.[6] Delays in TAT elicit immediate complaints from users while adequate TAT goes unremarked.[7] Unsatisfactory TAT is a major source of complaints to the laboratory regarding poor service and consumes much time and effort from laboratory staff in complaint resolution and service improvement. Despite advances in analytical technology, transport systems and computerisation, many laboratories have had difficulties improving their TATs. Emergency department (ED) TATs have not improved over several decades. In 1965 a mean ED TAT of 55 minutes was reported, in 1978 a mean of 55 minutes was reported while in 1983 mean collection to report TAT was 86 minutes for a chemistry panel including potassium.[8] A College of American Pathologists (CAP) Q-Probes survey of ED TAT in 1998 showed low satisfaction rates concerning the laboratory's sensitivity to urgent testing needs (39%) and meeting physician need (48%).[8] Laboratory TAT was felt to cause delayed ED treatment more than 50% of the time (43%) and also increased ED length of stay (LOS) over half the time (61%). With the increasing interest in the extra-laboratory phases of the testing process, more laboratories are including TAT as a key performance indicator of their service but often have problems meeting their internal goals.

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II. DEFINITION AND MEASURES OF TURNAROUND TIME

Inspection of the literature reveals a variety of different approaches to definition of TAT. TAT can be classified by test (e.g. potassium), priority (e.g. urgent or routine), population served (e.g. inpatient, outpatient, ED) and the activities included. This last area is the greatest source of variation in reporting of TAT. The steps in performing a laboratory test were outlined by Lundberg, who described the brain to brain TAT or "total testing cycle" as a series of nine steps: ordering, collection, identification, transportation, preparation, analysis, reporting, interpretation and action.[11,12] The term "therapeutic TAT" is sometimes used to describe the interval between when a test is requested to the time a treatment decision is made.[13–15] Although the laboratory can and perhaps should be involved in all these steps, many laboratories restrict their definition of TAT to intra-laboratory activities, arguing that other factors are outside their direct control and that timing data for extra-laboratory activities are not readily available.[16] Such an approach will necessarily underestimate TAT since non-analytical delays may be responsible for up to 96% of total TAT.[17,18] In the ED, delay in review of results by clinicians is the greatest component of perceived TAT.[16]

Intra-laboratory TAT can also vary in its definition with possible start points of sample receipt time, registration time, or analytical sampling time and end points of analytical completion time, result verification time, result transfer to electronic medical record time and report printing time.

Another classification of time periods separates the steps into the pre-analytical (order to preparation), analytical (analysis) and post-analytical (reporting to action) phases.[19,20] These divisions have often been used when classifying errors and delays and are sometimes used for description of TAT.

III. AIM OF THE STUDY

To analyze the turnaround time of selected lab sample test conducted in a multispeciality hospital inVadodara.

IV. OBJECTIVES

1) To study the laboratory turnaround time
2) To evaluate delay of turnaround time
3) To find out reasons for delay in turnaround time
4) To suggest measures to reduce turnaround time, if possible.

V. RESEARCH METHODOLOGY

A. Scope Of The Study

The scope of this study is to find the To find out reasons for delay in turnaround time in vadodara

B. Benefits of the study

The benefit of this study is we can knowledge the why the patients are select the hospital invadodara pipariya in dhiraj Hospital.

C. Assumptions

This study will bring out that the selection of hospital is low rate and the best treatment in thehospital for the other hospital.

D. Types Of Research Design

The study is a Observational study research design.

E. Unit of Analysis

Data was analyzed by using the Nonparametric Test. The statistical test was performed at the significance level of 0.05(5%).

F. Methods of data Collection

The data collection instrument is structured A Validated Structural Checklist provided by organization will be use for study purpose. The daily test conducted in multispeciality hospital Following formula can be used to determine sample size. Sample size= N/1+Ne2

Where, Population Size, N= 329| Margin of error = e = 0.05 at 95% confidence level

Total Population (N) is 329 patients of Trust based hospital

The sample size thus yieldedis 329 patients of Trust based hospital

G. Appropriate tools for data analysis

The Microsoft Excel tool use to analyses the complex task that summarizes the data with a preview of pivot tablets that help in filtering the data as per person requirement.

VI. CONCLUSION

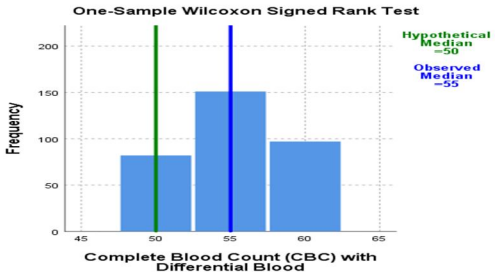
The study is the well indicate that the patients satisfaction for the treatment in selection of Dhiraj Hhospitals. they need to keep them healthy .the patients of the hospitals are various programmedfor blood camp routine check up camp The patients are interested if the hospital has a well – structured policy for the same. The concept of project is to verify the Time Around Time (TAT) in time for both IPD and OPD patients. The samples are test as soon possible in the time for the emergency and in normal time period.

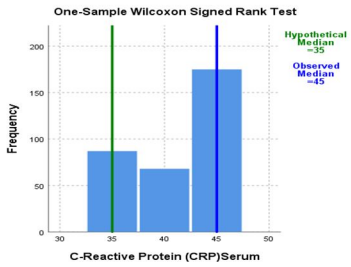
VII. LIMITATIONS OF THE STUDY

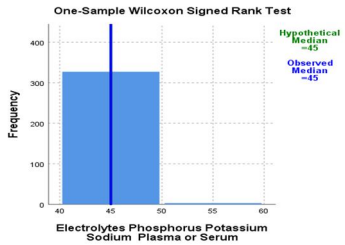
The study is conducted for a period of 1.5 month which is a limitation as the observation, ifdone, over a the period of time will help in better analysis of the situation.

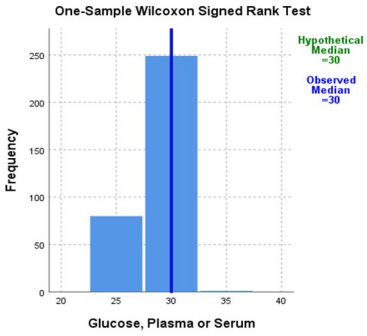
VIII. SUGGESTION

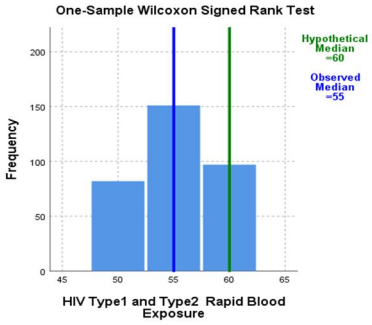
It is necessary very essential to provide the facilities to the OPD patients and In-Patients Department for the transportation of blood sample to the laboratories in time period

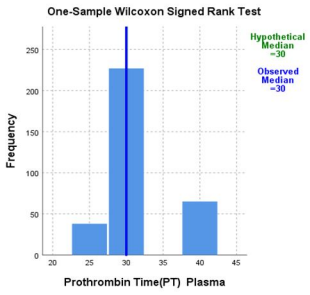


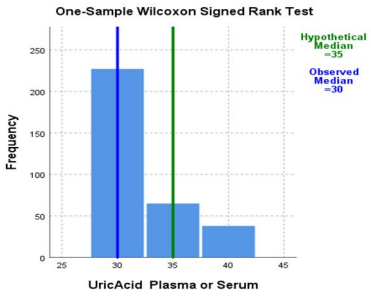


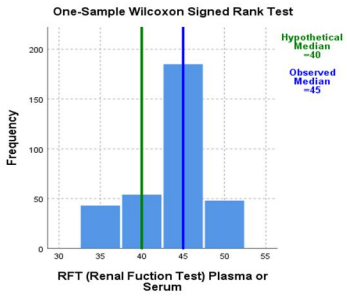


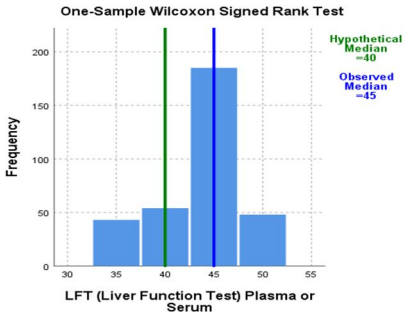








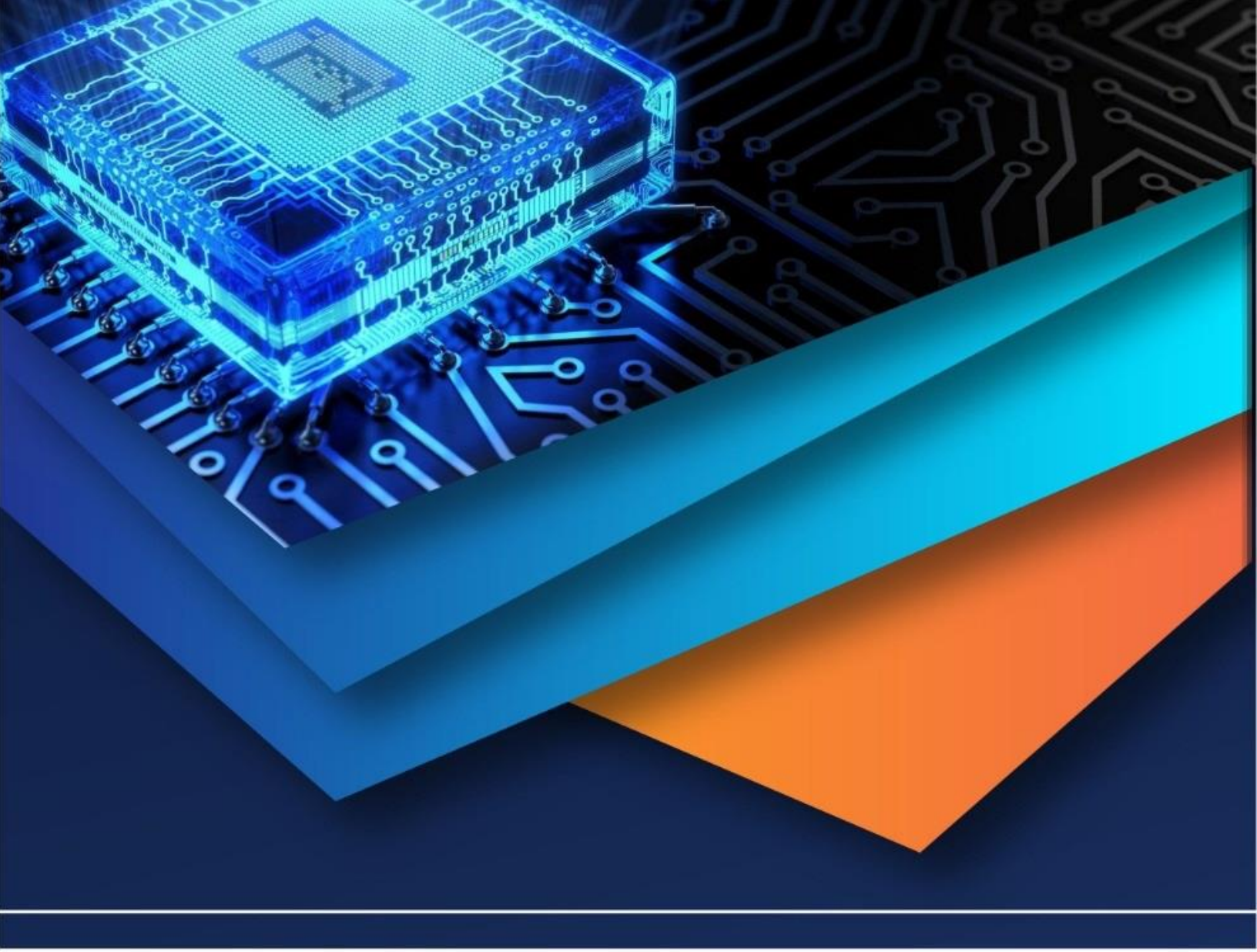




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