STREAMLINING PROCESS OF PATHOLOGY DEPARTMENT

@ Bhagwan Mahaveer Cancer Hospital and Research Center

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Overview of BHCHRC

Bhagwan Mahaveer Cancer Hospital and Research Centre, Jaipur (BMCHRC) has bed strength of 200.

This hospital has made a land mark in delivering cancer care services to the afflicted population of the northern part of the country.

Vision

To make Bhagwan Mahaveer Cancer Hospital and Research Centre (BMCHRC) comprehensive world class Cancer treatment center with cutting edge technology.

Mission

"To control & eliminate the problem of Cancer & to alleviate the suffering of cancer patients in the Country."

Introduction

A medical laboratory or clinical laboratory is a unit where tests are done on clinical specimens in order to get information about the health of a patient as pertaining to the diagnois, treatment and prevention of disease.

It acts as a spine for the patient care.

Accuracy, precision, timeliness, and authenticity are the four pillars of efficient laboratory services.

Turnaround time-

"A total turnaround time is defined as the cumulative time taken for a sample to be processed. It includes the start time at which the sample is taken from a patient, time spent in transportation, its arrival at reception, pre-analysis and post-analytical phases until validation by laboratory staff, the result being issued and its subsequent receipt by the requesting physician."

Aim –

The aim of this study was to evaluate the delay and reasons of delay of turnaround time (TAT) of tests in the section of clinical biochemistry and hematology.

Objective-

1. To study the difference between time taken for lab reports generation and dispatch with the standard time set by hospital.
2. To find out the cause of delay in process of sample collection to lab report dispatch.
3. To check and observe the maximum utilization of resources and minimize wastage by effective inventory management
4. To provide recommendations accordingly

Research Methodology

Study Design: Descriptive study and Observational study

Study Area: 200 bedded hospital (Bhagwan Mahaveer Cancer Hospital and Research Centre, Jaipur)

Study duration: 20th April 2015 to 30th April 2015

Study subjects: Patients providing sample for hematology and biochemistry test

Sample size: Total 50 patients. 25 patients sample for hematology test and 25 patients sample for biochemistry test

Sampling technique: convenient sampling

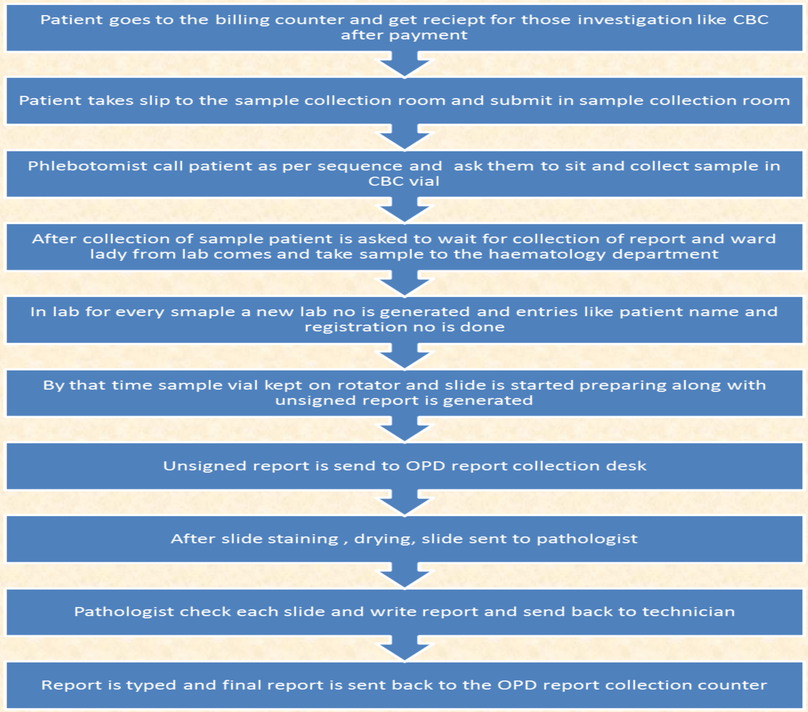
Study time- 9am: 5pm working day (Monday to Saturday)

Inclusion criteria: patients who come for hematology and biochemistry investigations for OPD patients

Exclusion criteria: In-patients investigations .

Data Collection Tools: Observation, review of records – Registers , Literature review

Hematology process flow chart

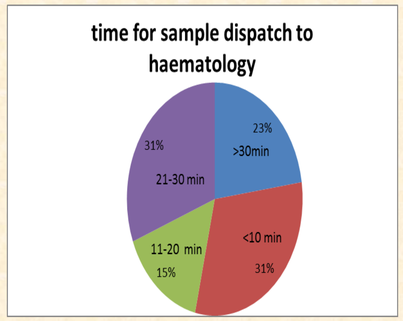


Data Analysis and Interpretation-

Haematology-

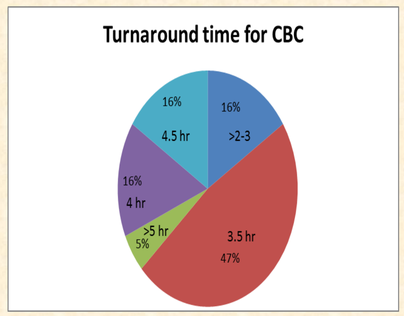
Standard time set for sample dispatch to lab is 10 minutes.

- Delay in sample dispatch from sample collection room to laboratory.
- pie chart depicts that delay for sample d ispatch after standard turnaround time is >20 minutes in 23% cases, 11-20 minutes in 31% case, 10 minutes in 15% cases and rest 31% cases doesn't delay.



Turnaround time for CBC report –

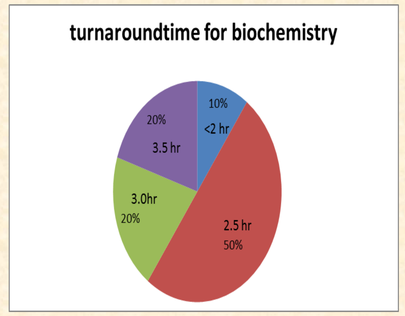
- standard turnaround time is 1-2 hour.
- Pie chart depicts that delay in CBC report after standard turn around time is 1 hour in 16% cases, 1.5 hour in 47% cases , 2 hour in 16% cases , 2.5 hour in 16% cases and >3 hour delay in rest 5% cases



Biochemistry-

Standard turnaround time for bio-chemistry department- 2 hour

Pie chart depicts that delay after stand ard turnaround time is of 30 minutes in 50% cases, 1 hour in 20% cases, >1.5 hour in 20% cases and rest 10% reports takes standard time



Findings-

- There is no permanent ward boy for taking collected sample to laboratory. After each half an hour ward lady comes from laboratory, which leads to accumulation of collected samples and also waste of time.
- There is no register or entry system for collected sample but they do mention at what time sample is being collected on investigation slip.
- Sample collection area is on 1st floor and laboratory is in basement so transfer of sample takes time.
- Approximately 10 samples come at a time, bought by ward lady due to delay dispatch.
- At hematology section machine report is generated in approx. 30 minutes but manual report takes almost more than 3 hours due to complex process i.e.-
  - Slide preparation
  - Staining of slide and drying
  - Send for reporting by DNB students and pathologist, which is a time consuming process and patients have to wait long time for a CBC report.
- For every sample comes to laboratory, entry is done in computer and lab no is generated.
- TLC and Platelets cost is very less on 3 part analyser as compared to 5 part analyser but every time using 5 parts machine for both Platelets and TLC which is a loss.
- In biochemistry section inventory of reagents is for 6 months , which may expire and a loss too.
- Rerun and calibration of biolis machine is more that we need to decrease.
- Reports take longer time to dispatch both in OPD and IPD because delayed authorization of report.
- Shortage of staff in biochemistry as more of the work load has on one staff and sometimes when machine breakdown occur then creates double burden on them.

Recommendations-

- There should be fixed ward lady/boy for dispatching the collected sample to laboratory in every 10 minute.
- There should be entry system for collected sample at collection site also so that while dispatching, sample doesn't get misplace and to keep a record.
- Unsigned report of CBC can be provided within time frame, if one machine is shifted to sample collection site.
- Most of the times unsigned report is similar to manual reports so for cross checking send only those reports to manual check or slide preparation which has some critical values or out of range values.
- Bar code system should be developed to reduce time taken for entry, to generate lab no.
- Online authorization- the facility for online authorization of reports should be provide to consultant to reduce the authorization time.
- Either use 3 parts analyser machine for TLC test and if 3 part analyzer has some technical problem then ask consultant to write only CBC test (not TLC or Platelets as separate test) so