Study on ***"What are the possible causes for the delay in Turn-around-time in Laboratory test results and gaps in Operations of Phlebotomy and laboratory services at a University Hospital in UAE?"***

&

"Assessment of Data Management Practices and Analysis of Gaps against standards set by JCI" in a University Hospital in UAE."

Dissertation Submitted to

The IIHMR University, Jaipur

For the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

In

Hospital and Health Management

By

Dr. Aayushi Sharma

Under the Supervision and Guidance of

Dr (Col) Mahender Kumar

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled "Study on *"What are the possible causes for the delay in Turn-around-time in Laboratory test results and gaps in Operations of Phlebotomy and laboratory services at a University Hospital in UAE?"& "Assessment of Data Management Practices and Analysis of Gaps against standards set by JCI" in a University Hospital in UAE."* is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been dully acknowledged in the text.

Aayushi

Dr. Aayushi Sharma

30/06/2022

COMPLETION CERTIFICATE

CERTIFICATE FROM FACULTY GUIDE AND SCHOOL DEAN

ACKNOWLEDGEMENTS

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I want to express my deep thanks to Dr. Gurjit Singh Monga for his encouragement and to Dr. Omar Nabi for his insightful counsel, both of which I will use to advance my professional development. I also want to express my gratitude to Dr. Prashant Hegde, group chief of quality, for acting as my mentor at that time. I want to sincerely thank Mr. Himanshu Maitra, Manager of the Department of Quality Assurance, for his insightful observations and genuine interest in helping me advance my knowledge and push my boundaries.

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Aayushi

Dr. Aayushi Sharma

MBA Hospital Management (Batch of 2020-2022)

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List of Figures and Tables

List of Abbreviations

TAT- Turnaround Time

JCI- Joint Commission International

Dept- Department

LIS- Laboratory Information System

ED- Emergency Department

IPD- In-patient Department

OPD- Out-patient Department

LOS- Length of Stay

HOD- Head of Department

UAE- United Arab Emirates

TUH- Thumbay University Hospital

QA- Quality Assurance

RCA- Root Cause Analysis

INTRODUCTION TO THE ORGANISATION

One of the biggest healthcare organizations in the area is the GMC Chain of Hospitals. Education, healthcare, and research are the three pillars on which the company concentrates.

It is the first teaching hospital in the private sector in the United Arab Emirates. The first Thumbay Hospital began in Ajman on October of 2002, by H.H. Sheikh Humaid Bin Rashid Al Nuaimi.

With 350 beds, Thumbay University Hospital is the biggest academic private hospital in the Middle East.

Figure 1- Thumbay University Hospital, UAE

ABOUT THE ORGANISATION

Thumbay University Hospital is a cutting-edge family healthcare facility with a 75-bed long-term care and rehabilitation unit, a PET-CT scan center for oncology, 10 modern operating rooms for all major specialties, a center for imaging, a cath lab, an intensive care unit, a neonatal intensive care unit, a pediatric intensive care unit, a 10-bed dialysis unit, and more. Ten labor and delivery rooms, a NICU, a SCBU, and a well-baby unit are all located on a floor specifically designated by the hospital for its mother and child program.

The hospital has presidential suite rooms, VIP rooms, private rooms, etc. in addition to Marhaba Services, which are individualized fast track services for patients. For better relaxation and total recuperation of in-patients, they also have a "Therapeutic Garden."

A multi-restaurant food court, movie theater, coffee shops, health club, free parking places, etc. are available as amenities for patients and visitors. It is a part of the Thumbay Group's academic hospital network, with professional staffing from more than thirty different countries serving patients in fifty languages and hailing from more than one seventy five different countries.

Through its facilities in Dubai, Ajman, Sharjah, and Fujairah in the United Arab Emirates, as well as Hyderabad in India, the hospital network has expanded its services.

Vision: To be the leading network of academic hospitals in the Middle East

Mission: To provide patient-centred care of the highest quality in an academic set up.

Core Values of Thumbay University Hospital:

- Excellence
- Trust
- Client Centered
- Ethics
- Continuous Learning
- Teamwork
- Integrity

STUDY 1: Laboratory Turn-around-time and Root Cause Analysis

"What are the possible causes for the delay in Turn-around-time in Laboratory test results and gaps in Operations of Phlebotomy and Laboratory services at a University Hospital in UAE?"

ABSTRACT

Title

The possible causes for the delay in Turn-around-time in Laboratory test results and gaps in Operations of Phlebotomy and Laboratory services at a University Hospital in UAE

Introduction

A laboratory's turnaround time is the time it takes between receiving specimens in the laboratory and transmitting reports with verification. Thumbay Labs, an associated clinical lab of Thumbay University hospital, was receiving complaints about delayed TAT. After rigorous research of the core reasons of everyday activities, this study attempts to quantify the TAT and develop measures for improvement.

Objective

The main objective was to analyse the status of TAT for laboratory services at Thumbay Labs and investigate root causes behind delay and to suggest improvement methods.

Methodology

An observational cross-sectional study was conducted with an inclusion criteria of collection to be done from Biochemistry, Hematology and Microbiology were included and histopathology, Urine & Stool sample were excluded. A total of 130 samples were taken. Primary and secondary data was collected through departmental log sheets, HMIS, and record registers. An analysis of the data was carried out including calculation of the current TAT and outliers present that caused the deviation. After calculation, Root cause analysis was done to determine the possible areas for improvement. This process and compilation of data was conducted during the month of April 2022.

Results

In OPD, 45% samples took 1 hour From initiation of Doctor's Request In HIMS To being received in laboratory. Rest all took maximum 3 hours. In IPD, 27% of samples reached the Laboratory within 30 minutes, while 56% were received within 2 hours and 44% of samples reached after 2 hours to 8 hours or perhaps more. Further, the time from The Receipt Of Sample In the Lab to releasing of Report Release in OPD was 30 minutes for 12% of reports, within 1 hours for 48%, within 2 hours for 96% And 100% of reports were released within 3 hours. In IPD it took 23% reports a time of 30 minutes for report release. 66% of reports were released within 1 hours, 84% of reports within 2 hours and 97% were released within 3 hours.

It was found also that verification of test findings was consuming unnecessary time, and equipment breakdown, staff shortage, transportation techniques, and underutilization of the pneumatic tube system, department layout, unavailability of services in all wings, miscommunication and lack of uniformity in documentation all led to ignorance and hence TAT delays were observed.

Conclusion

There is definite scope for improvement. Recommendations need to be implemented. The absence of senior management participation in identifying gaps was a major cause of this unrectified situation. Holding meeting and discussing statistics with stakeholders was the need of the hour.

INTRODUCTION

Any institution that employs methods and instruments for the examination of blood, tissues, secretions, and excretions of the human body, or any function of the human body, in order to diagnose disease, follow the course of disease, aid in the treatment of such disease, or detect drugs or toxic substances, is referred to as a medical laboratory. A medical laboratory is not one that simply collects or prepares specimens, or both, or that solely functions as a shipping service and does not undertake on-site testing.

Turnaround time (TAT) is defined as the time period between receiving specimens in the laboratory and dispatching reports with verification. Thumbay University hospital's affiliated clinical labs called Thumbay Labs was receiving complaints concerning delayed TAT.

Unfortunately, the focus was solely on the period between the time the sample arrives in the laboratory and the time the report is accessible when utilizing TAT as an evaluation technique for blood sample processing efficiency. However, it had come to a stage where the advancements in analytical speed are just minimal.

Figure 2-Logo of Thumbay Labs

Aim

To improve the TAT for result generation and overall optimization of Operations through intervention.

Objective

- To determine the turnaround time of the laboratory test results.
- To identify reasons which lead to delayed TAT and implement an improvement program at a University Hospital in UAE.

REVIEW OF LITERATURE

Brie A. Stotler and Alexander Kratz, 2012, published in American Journal of Clinical Pathology in their study on "Determination of Turnaround Time in the Clinical Laboratory: "Accessioning-to-Result" Time Does Not Always Accurately Reflect Laboratory Performance" stated that between the delivery of the specimen and accessioning, there were lengthy delays that were not recorded in computer-generated TAT reports. They reasoned that since the current TAT reports evaluated the time from sample accessioning rather than sample arrival, the delays reported by the clinical personnel may have been caused by delays between the arrival of the specimens in the laboratory and accessioning. The TAT objective was not met when the TAT was adjusted to account for these delays. Delays were greatly reduced as the number of staff increased. All laboratory-controlled portions of the testing processes must be included in TAT reports, according to laboratories. Targeted measures, well-planned interventions, and analysis of the reasons for inconsistencies between computer data and clinician views can reduce TAT and enhance service.

Rajendra Dev Bhatt, Chandani Shrestha and Prabodh Risal, 2019 in their study on "Factors Affecting Turnaround Time in the Clinical Laboratory of the Kathmandu University Hospital, Nepal" shared that The time needed to correct pre-analytical mistakes made by other departments rather than the laboratory itself was the primary cause of delayed laboratory reports. The cash unit has the highest level of mistake in the whole testing process, making it the main cause of the extended TAT. Nevertheless, the causes of extended TAT may range from hospital to hospital depending on several conditions.

RATIONALE

The majority of diagnoses are based on blood tests. Waiting time is an important asset for doctors and patients when planning and deciding on treatment, and it also has an impact on pricey bedtime.

Often, turn-around time is only assessed in clinical analyses in the lab, but TAT now encompasses all steps from sample request to test result receipt by the doctor. When a request is made, the procedure begins. The patient is identified and a blood sample is taken by a nurse or phlebotomist. The next step is to take the sample to the laboratory and register the sample once it arrives. Following that, the sample is tested, and the results are returned to the doctor.

Because of technological advancements, laboratory turnaround times are usually decreased to a few seconds or less. However, the Turnaround Time may be greatly reduced when the aim is to reduce the time between when the sample is obtained and when the findings are made available. Hence this study incorporates time measurement starting from doctor's order for a test, collection and receiving of samples in laboratory, and later generation of results.

LABORATORY WORK FLOW

OPD Workflow

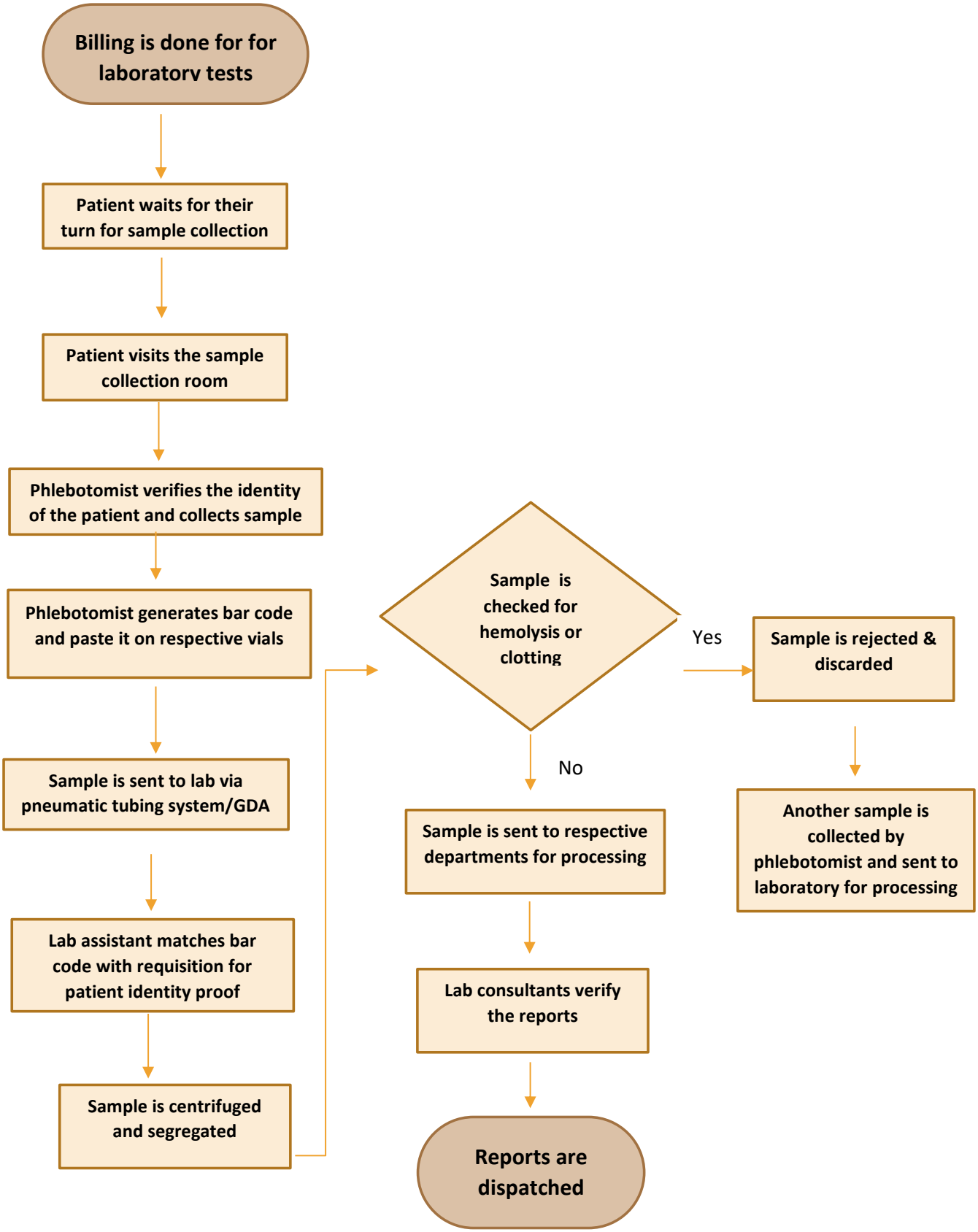

Figure 3- Process Flow for OPD

IPD Workflow

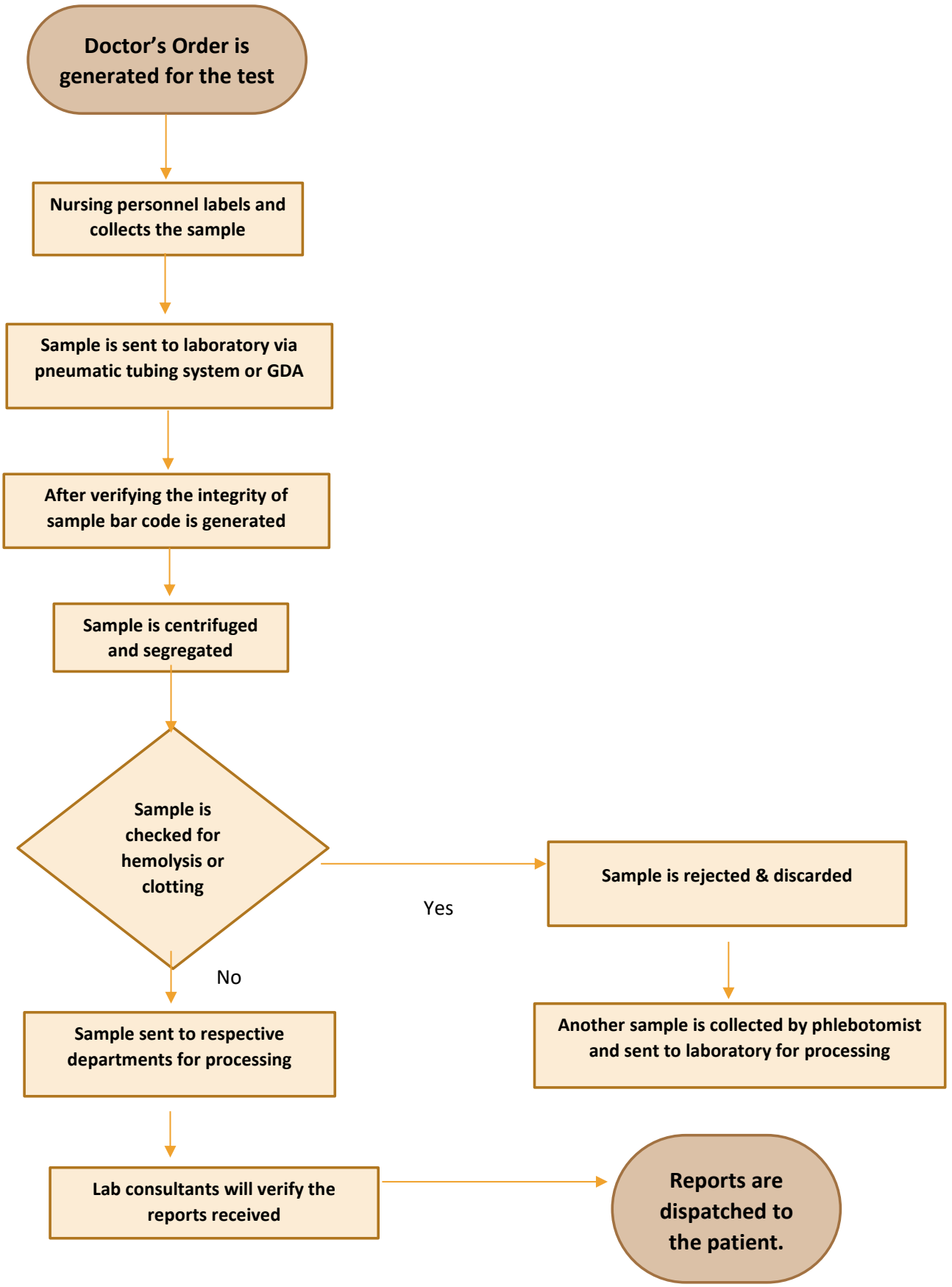

Figure 4- Process flow for IPD

METHODOLOGY

Research question

What are the possible causes for the delay in Turn-around-time in Laboratory test results and gaps in Operations of Phlebotomy and laboratory services at a University Hospital in UAE?

Research Design - Cross-sectional Observational Study

Duration of the study - The study is conducted for a period of 1 month during the month of April, 2022. Implementation of improvement plan was executed in the month of June, 2022

Study populations

Inclusion Criteria – All the reports generated from Biochemistry, Hematology and Microbiology were included.

Exclusion Criteria- All the histopathology and Urine & Stool samples were excluded from the study.

Sample size: 130

Sampling technique-

Convenient Sampling Technique

Study tool

The study included data collection from log book maintained by the phlebotomist and Information Management System in the hospital and laboratory.

Data analysis plan

MS Excel was used to analyze the data and then compiled in Microsoft power point.

A. Time Taken From Doctor's Request In HIMS To Sample Receipt In Lab In OPD

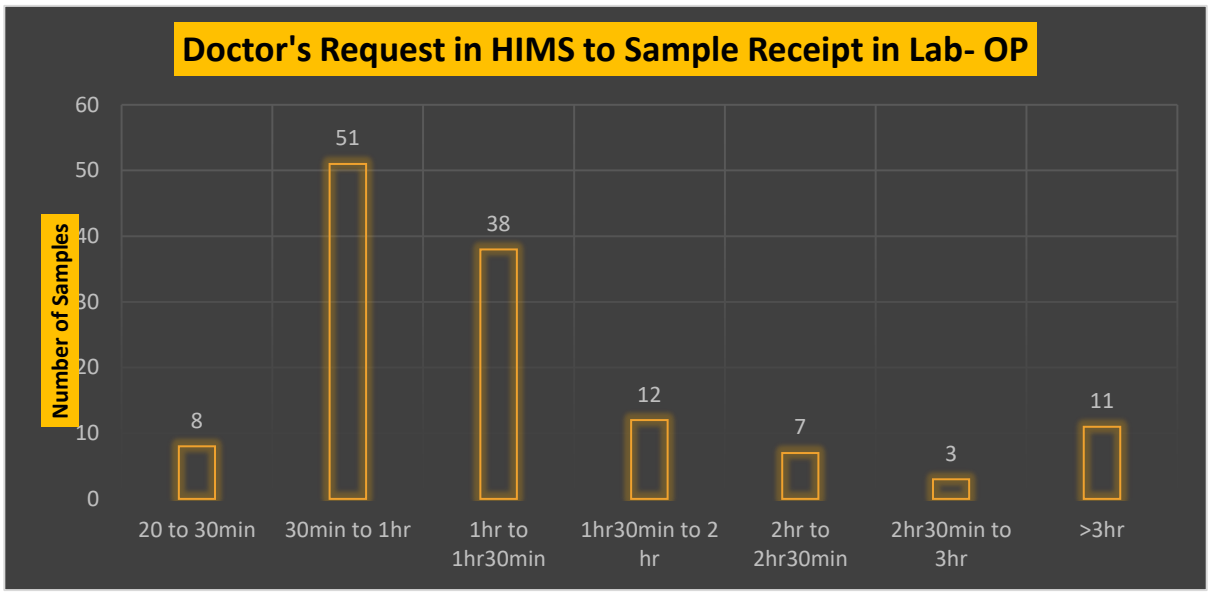

Figure 5- Time taken for Doctor's Request in HIMS to Sample Receipt in Lab- OP

Key Finding:

- 45% of samples reached the Laboratory within 1 hour.
- 55% of samples took 1 hour to 3 hours or more to reach Laboratory.

B. Time Of Receipt Of Sample In Lab To Time Of Report Release In The OPD

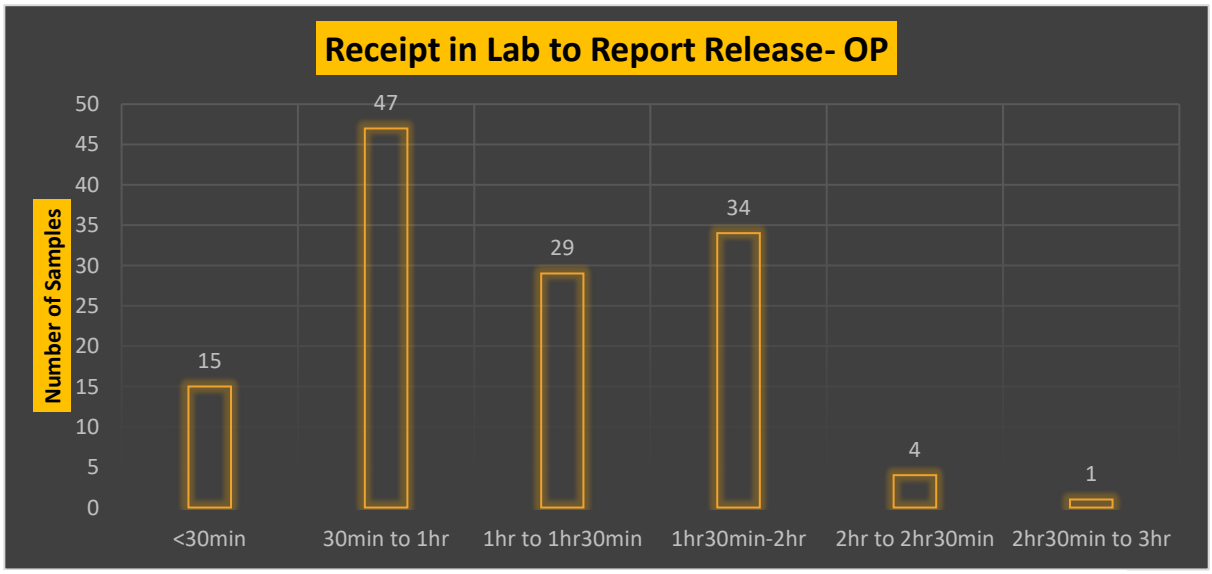

Figure 6- Time taken for Receipt in Lab to Report Release- OP

Key Findings:

- 12% of reports were released within 30 minutes.
- 48% of reports were released within 1 hours.
- 96% of reports were released within 2 hours.
- 100% of reports were released within 3 hours.

C. Time taken from Doctor's Request in HIMS to Sample Receipt in Lab- IP

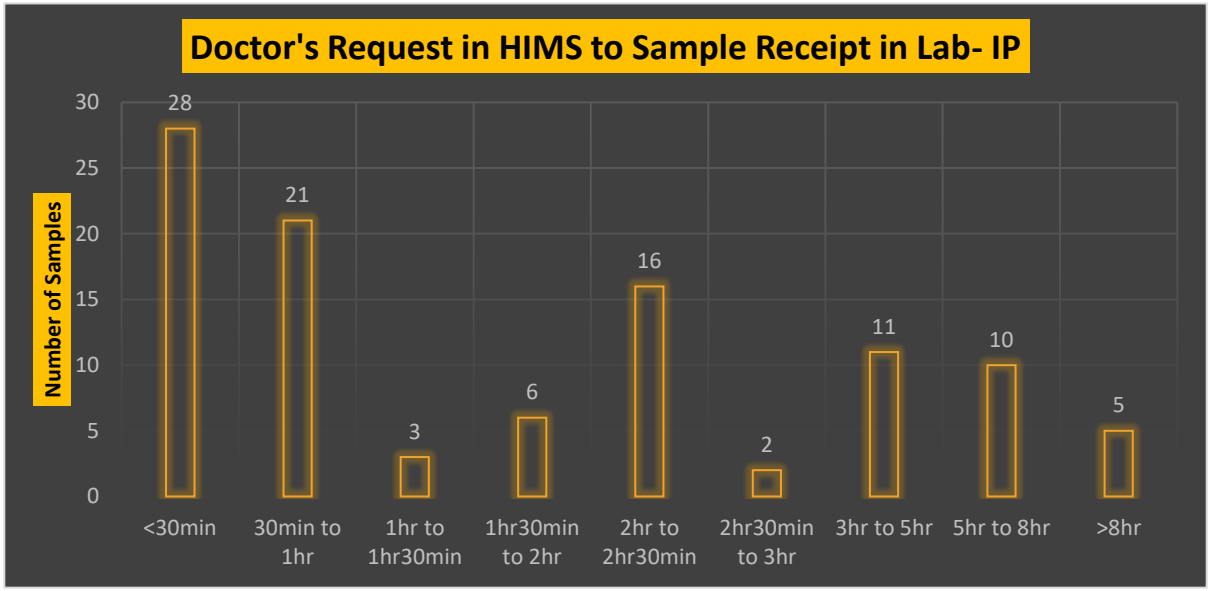

Figure 7- Time taken for Doctor's Request in HIMS to Sample Receipt in Lab- IP

Key Findings:

- 27% of samples reached the Laboratory within 30 minutes.
- 56% of samples reached the Laboratory within 2 hours.
- 44% of samples reached the Laboratory after 2 hours to 8 hours or more.

D. Time Of Receipt Of Sample In Lab To Time Of Report Release In The Out-Patient Department

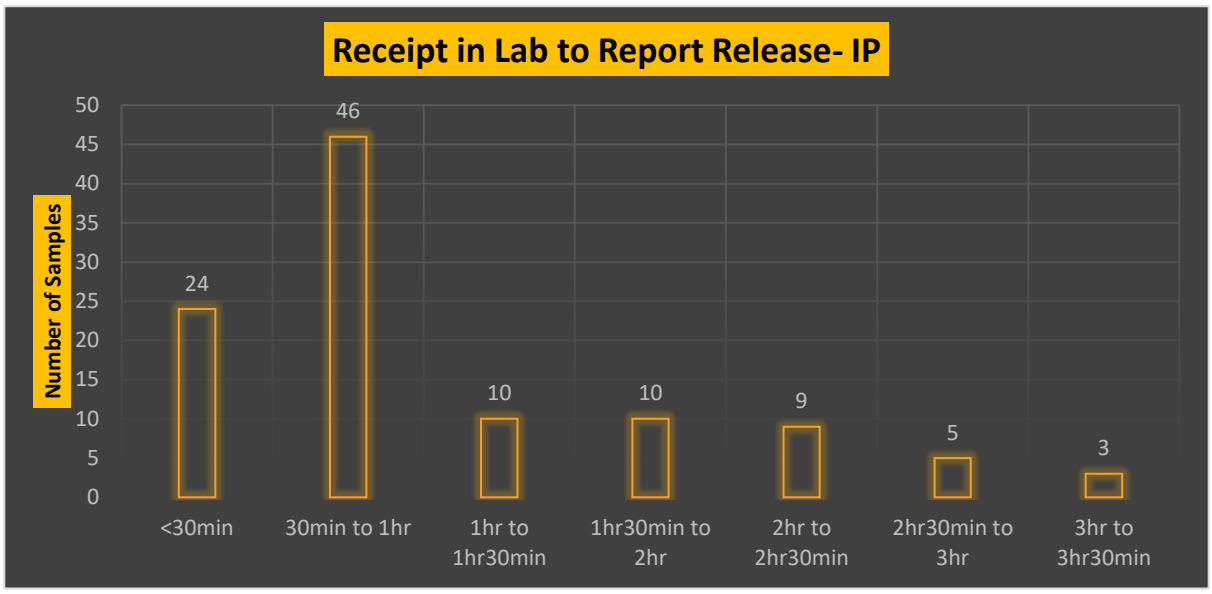

Figure 8- Time taken for Receipt in Lab to Report Release- IP

Key Findings:

- 23% of reports were released within 30 minutes
- 66% of reports were released within 1 hours.
- 84% of reports were released within 2 hours.
- 97% of reports were released within 3 hours.

ROOT CAUSE ANALYSIS

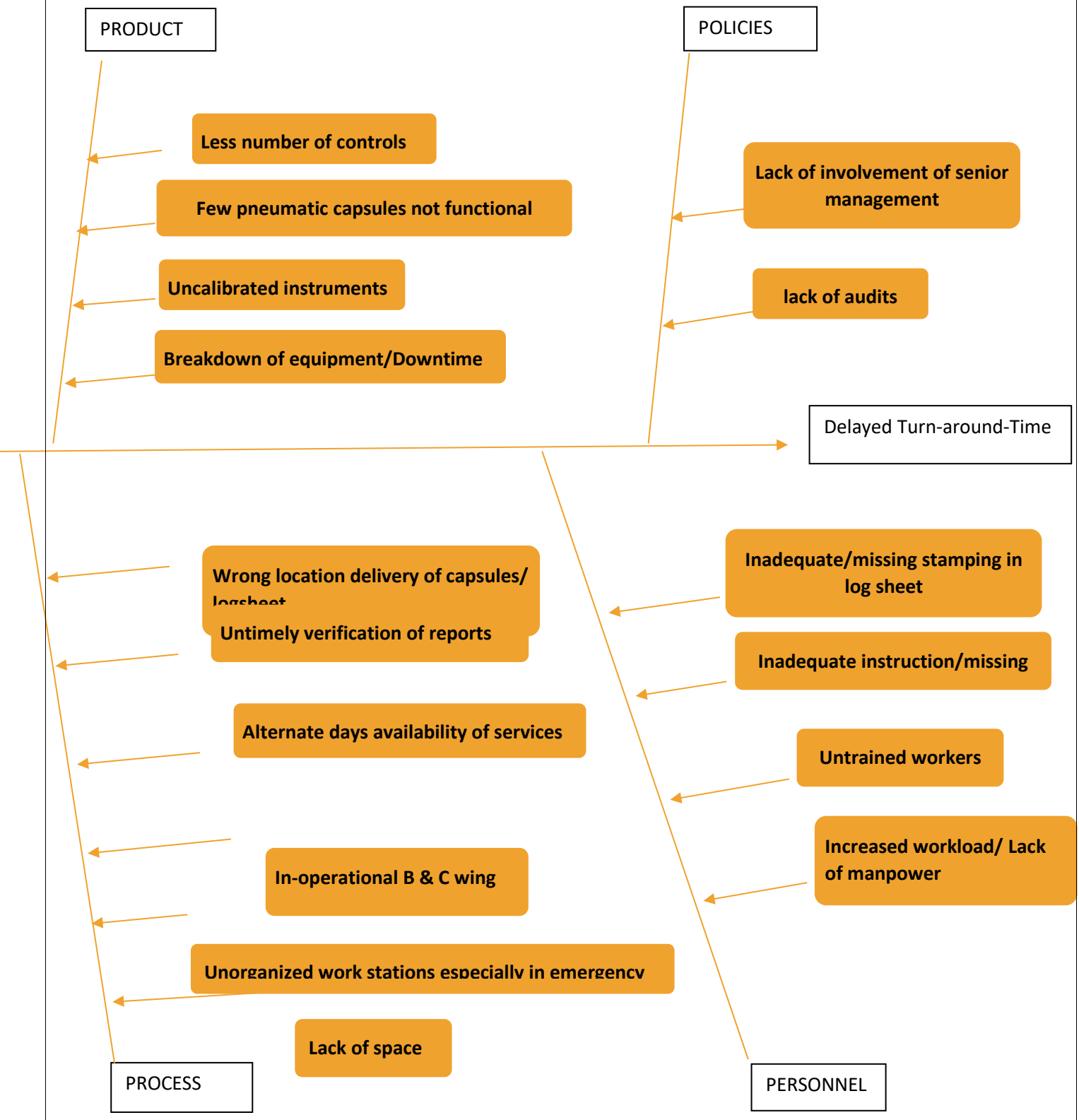

Figure 9- Root Cause Analysis

LIMITATIONS OF THE STUDY

- Blood samples were delivered to the laboratory using standard pneumatic transport methods. As a result, hemolysis or delays caused by mechanical issues may develop.
- There was a failure of communication and understanding between clinical and laboratory workers. There were also no scheduled meetings.
- The study had limitations with resources availability and allocation, availability of time and appropriate orientation towards making the laboratory lean.

CONCLUSION

There were several outliers that influenced the laboratory's TAT, and in order to minimize the TAT, the hospital needed to concentrate on monitoring the procedures, reducing waste, and eliminating repeated tests. This will also assist to ensure quality. The laboratory consultants' verification of test findings required time, and equipment outages, staffing shortages, transportation techniques, and underutilization of the pneumatic tube system all led to TAT delays. The absence of senior management participation in identifying gaps and discussing them with stakeholders may have improved the process flow prior to intervention.

Policies should be designed and implemented to improve TAT, and audits should be undertaken on a regular basis.

This will not only increase patient happiness, but will also help to minimize patient length of stay and speed up the hospital release procedure.

STRATEGY FOR IMPROVEMENT

- Improve Phlebotomy Services; both OP & IP
- Further Optimization of Lab operations to save more time
- Layout improvement for sample collection areas

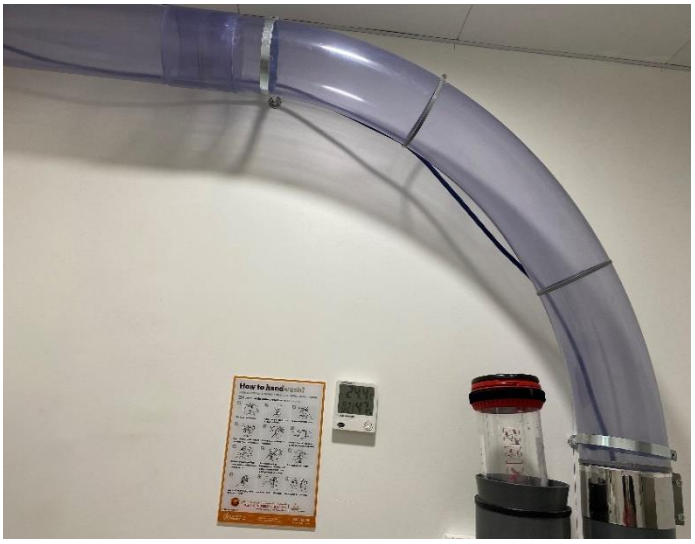

Figure 10- Pneumatic Tube System

RECOMMENDATIONS

- After sample collection and labeling, the nursing staff should be encouraged to use the pneumatic tube system.
- It must be assured that the laboratory receives the proper labeling and log chart.
- The closure of sample containers needs to be verified twice.
- Pneumatic capsules that are not working properly need to be fixed to ensure appropriate equipment operation.
- Equipment and machines require routine maintenance at regular periods.
- Regular audits will aid in monitoring and, ultimately, TAT improvement.
- It is important to identify the key performance measures that fall short of the standards.
- It is necessary to identify wastes and non-value-added services that may delay reporting. Once waste activities have been identified, they should be stopped using the best management practices and resources.
- The laboratory consultants must be trained in lean management to assure a better surveillance and implementation.

Figure 11- Laboratory Layout

STUDY 2: Data Management Practices

"Assessment of Data Management Practices and Analysis of Gaps against standards set by JCI" in a University Hospital in UAE.

ABSTRACT

Title

"Assessment of Data Management Practices and Analysis of Gaps against standards set by SOPs" in a University Hospital in UAE.

Introduction

SOPs for the hospital stipulate that data should be gathered in a time efficient, cost-friendly, and overall appropriate manner, with the degree of accuracy and completeness required for the intended use of data, and that health records should be checked on a regular basis.

Gap analysis was performed to examine the present service delivery system and identify areas for improvement. The departments of Information Technology and Medical Records Documentation had critical roles in carrying out this job, as detailed in other sections of the study.

Objective

This study was done to understand if the existing documentation procedure is according to the SOPs established by the hospital and to assess the hospital management information system, carry a SWOT analysis and to recommend effective solutions wherever required.

Methodology

An observational study was carried by simple random sampling and then auditing of 665 In-patient patient medical records from Cardiology, Dental, E.N.T., Gastroentorology, Genral Surgery, Gynaecology, Internal Medicine, Neonatology, Nephrology, Neurology, Opthalmology, Orthopaedics, Paediatrics, Pulmonology, Urology. Outpatient files were excluded from the study.

Data was collected in the month of February, 2022 through observation, conducting open and closed file audits and recorded in the MRD audit checklist. Semi-structured interview were also conducted. The data collected in audit checklist was analysed with Microsoft excel and compiled in Microsoft power point.

Results

It was observed that Out of the 665 audited, 82% of the medical records were found complete during the audit and 18 % of the medical records showed incompliance of completion according to set parameters. Gynaecology (254) and Pediatrics (213) constituted the majority of the hospital's patients served during the observed time period. Death Summary, Discharge Checklist, Patient Education, Patient Identification Labels, Daily Nursing Record and Medication Reconciliation were often the

most compliant documents. One of the most commonly observed deficiencies were the missing date and time or proper signatures of the authorized healthcare personnel for the concerned document.

Conclusion

The high percentage of compliance in TUH papers is noteworthy, even though there is room for improvement in the other areas of concern. A document- and error-wise data analysis revealed that healthcare personnel were unaware of the need of precise documentation, time stamping, signage, and authorized person's name. The analysis of therapy may be improved and made simpler to understand when revisited throughout recovery with complete treatment sheets, quick signatures from doctors and consultants, and proper authorization form documentation.

With the installation of HIMS, electronic medical records, it was also feasible to make a patient's medical history easily accessible outside of the hospital's walls without needing to request access from several departments. However, it is crucial to ensure that employees are trained to use it efficiently.

INTRODUCTION

A medical record is a clinical, scientific, administrative, and legal document relating to patient care in which sufficient data in the sequence of events is recorded to validate the diagnosis, treatment, and end results. The medical records department ensures that patient records are properly maintained in order to ensure their security, confidentiality, and accessibility by both the patient and the doctor.

The assessment of the degree to which a product or service satisfies the requirements is referred to as service quality. The accuracy and readability of information in medical records directly affects the quality of patient treatment. It is critical to keep a complete record in order to comply with licensing and certification criteria and to demonstrate that a patient received acceptable treatment.

It is vitally critical to keep medical documents safe at the hospital. This department examines, stores, and makes these files available for retrieval if necessary in the future. The medical record department (MRD) also contributes to community health research. The MRD allows us to determine if all departments (particularly the clinical ones) are operating at peak efficiency. A failing medical record department might also result in document misplacement from the file.

Aim

To assess the compliance rate of documentation in medical records of patients in the hospital.

Objectives

- To understand if the existing documentation procedure is in accordance with the SOPs established by the hospital.
- To assess the hospital management information system and carry a SWOT analysis.
- To recommend effective solutions wherever required

REVIEW OF LITERATURE

Muhammad Ali Sodik, Kharisma Syahda Widyastika from IIK Strada Indonesia in their study on "Analysis Completeness of Outpatient Medical Record Documents Completion Based on Motivation and Compliance with Basic Tasks and The Function of Officers", 2020, noted that in order to acquire a total sample of 40 respondents, their study approach employed cross-sectional and correlational data collection methods together with a basic random sampling strategy. Dummy regression analysis was the method employed for data processing. The findings revealed that 18 documents (or 45 percent) of the 40 outpatient medical record documents fell into the poor category. 22 respondents in Puskesmas Tugu Trenggalek (or 55 percent) exhibited a moderate degree of motivation, whereas 17 respondents in the sample were non-compliant (42.5 percent)

Mark Mellott, Jason Bennett Thatcher & Nicholas Roberts, in their study on "Electronic medical record compliance and continuity in delivery of care: an empirical investigation in a combat environment", 2013, used a principal-agent viewpoint to comprehend the obstacles to U.S. military EMR policy compliance. They examined the implementation and impact of monitoring and punishments on EMR compliance at combat support hospitals using a special data set gathered over a 105-week period. According to their findings, monitoring and penalties have a beneficial influence on the rate of EMR completion but have no bearing on the rate at which EMRs are initiated. Their findings had implications for EMR compliance and implementation research and policy in vertically integrated healthcare systems.

RATIONALE

This section of my thesis focuses on how medical records are documented and where gaps exist that must be filled. When it comes to healthcare, documentation is essential. The information is critical for all healthcare workers participating in the patient's care, and the administrative personnel who document their care in an institute.

Monthly auditing of the medical record documentation is an indicated activity of the department's everyday tasks to check for incomplete files. Its JCI certification prepares the organization.

The gap analysis is performed to determine the degree of training necessary for healthcare workers. Better quality services may be offered to the admitted patients with frequent and adequate training, and the personnel will be able to grasp and follow the procedure while keeping the standards anticipated in mind.

METHODOLOGY

Research questions

1. Is the hospital methodology and process of medical record keeping compliant with JCI Standards?
2. Is the current HMIS capable of meeting current and future system requirements for TUH? Is the system adding to the quality of services in the hospital?

Research design: Non-experimental and Observational Study

Setting: Thumbay University Hospital, Al Jurf, Ajman, UAE

Duration of study: Month of February 2022

Sample size: 665 patient records were sampled.

- **Inclusion criteria**- Medical records of inpatients who visited Thumbay University Hospital in February i.e, patients admitted for specialities from Cardiology, Dental, E.N.T. , Gastroentorology, Genral Surgery, Gynaecology, Internal Medicine, Neonatology, Nephrology, Neurology, Opthalmology, Orthopaedics, Paediatrics, Pulmonology, Urology
- **Exclusion criteria**- Outpatient files are excluded from the study due to non-discharge status and thus their redundancy in completion status assessment.

Sampling technique**:** Simple random sampling

Sampling selection**:** The data was collected from Inpatient patient record files from Medical Record Department of Thumbay University Hospital, Al jurf, Ajman.

Data collection procedure**:** The data is collected through observation and conducting open and closed file audits and recorded in the MRD audit checklist. Semi-structured interview with designated staff and concerned departmental heads was planned to discuss observational points in the HMIS and the operations of the department.

Data collection instrument**:** Data collection instrument would include an audit checklist created on excel sheet and in-depth interview questionnaire form.

Data analysis plan: The data will be collected in MRD audit checklist and thus the data will be analysed with Microsoft excel and compiled in Microsoft power point.

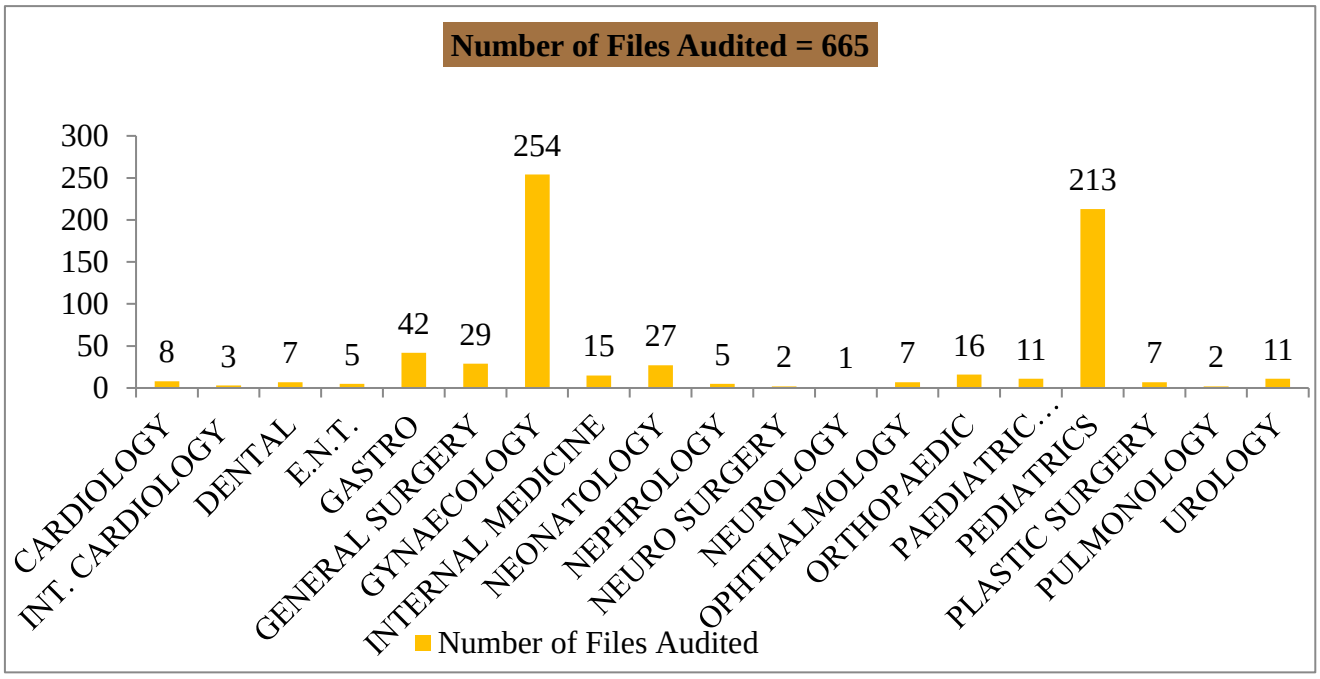

Figure 12- Speciality wise distribution of audited medical records

1. Out of the 665 patient records that were audited, it was observed that most patient records that were sampled were from the specialities of Gynaecology(254) and Pediatrics(213) which constitute the majority of the hospital's patients served during the month of February, 2022. Rest of the specialities were very few when compared to these two.

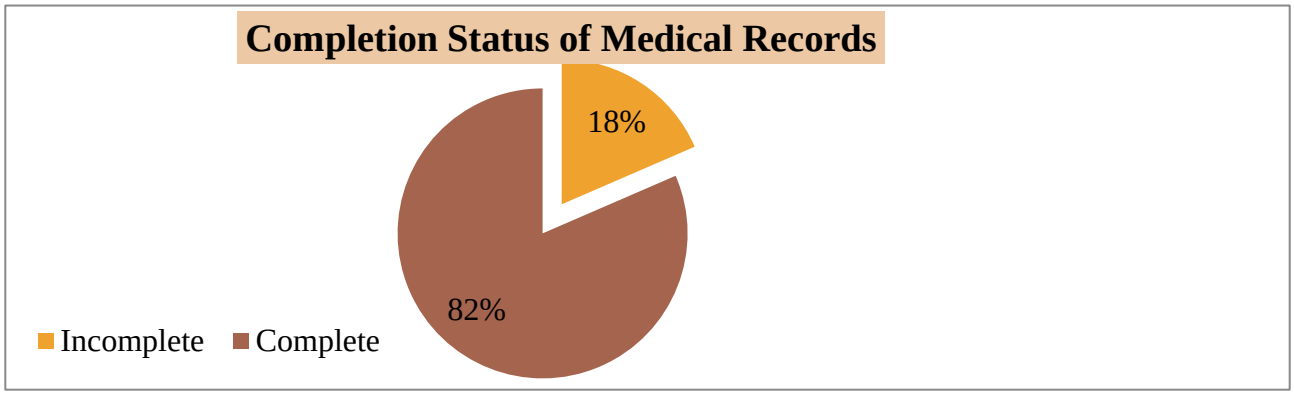

Figure 13- Percentage of compliant documents

2. Out of the 665 audited, 82% of the medical records were found complete during the audit and 18 % of the medical records showed incompliance of completion according to set parameters.

3. Documents With 90% Compliance-
    - Death Summary
    - Discharge Checklist
    - Patient Education, Patient Identification Labels
    - Daily Nursing Record
    - Medication Reconciliation.

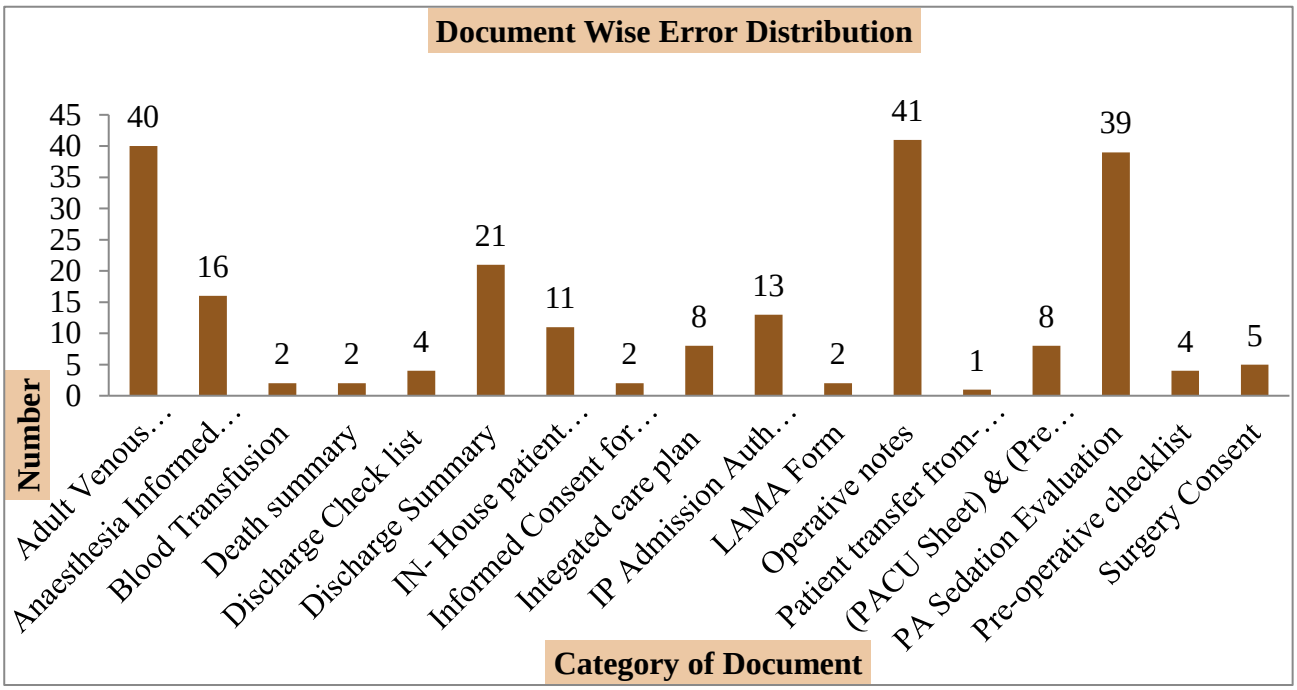

Figure 14- Document wise error distribution

4. During the audit it was observed that some category of documents were more non-compliant than the others. This was done to identify the gaps and provide training to the concerned healthcare workers who were supposed to fill patient and clinical information in these. It was observed that Procedure Consent for Adult Venous Thromboembolism, Operation Notes and Post Anesthetic Sedation Evaluation form were most deficient, followed by Discharge Summary and Anaesthesia Informed Consent. These process incharges and executives were listed to provide training on the importance of efficient documentation and were acquainted with set SOPs of the hospital.

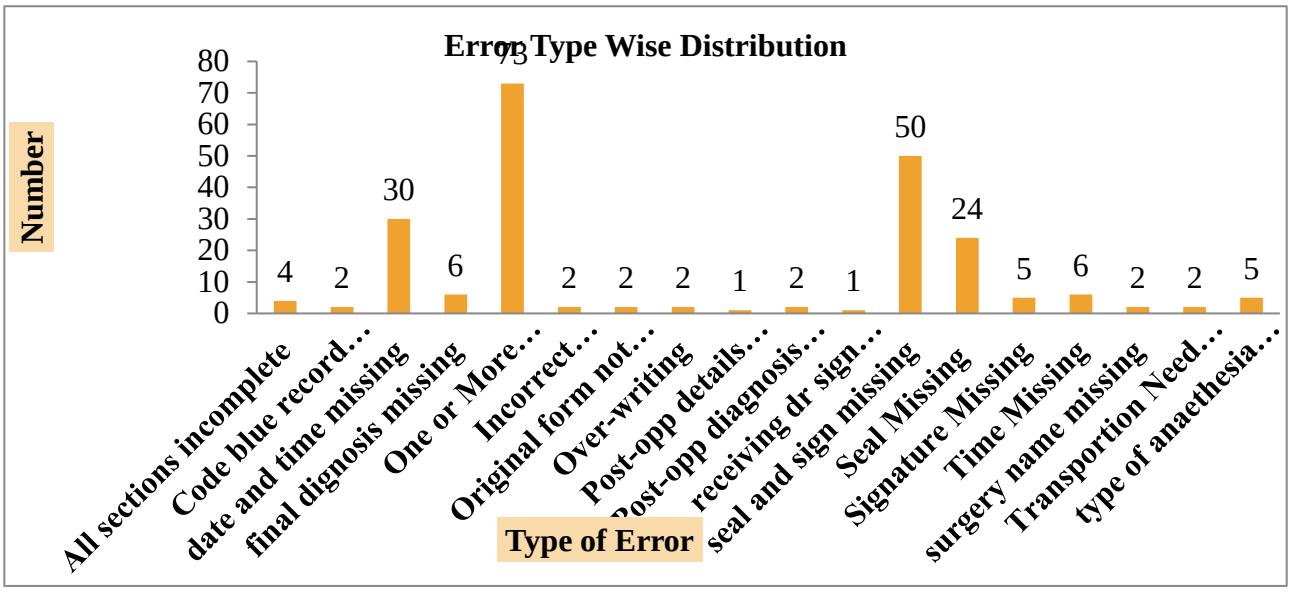

Figure 15- Error Type wise distribution

5. One of the most commonly observed deficiencies were the missing date and time or proper signatures of the authorized healthcare personnel for the concerned document. This meant that they needed to be acquainted with the significance of this missing detail.

LIMITATION OF THE STUDY

1. Since the current tool for data collection was inadequate, data aggregates cannot be trusted. Further suggestions are offered.

B	C	D	E	F	G	J	K	L	M	N	Q	R	S	T	U	V	W	X	Y	Z
Doctor Name	Department	IP No.	Hosp No.	at.Nam	Date of Adm.	Bed No.	Company	Discharg	Leath of stay	Status	Patient transfer fro extr	LAMA	Death summa	Discharge Summar	Medicatio n Reco	IP Admission Authorisatio n Form & Consent	Informed Consent for Vaginal Delivey	Surgery Consent	High Risk Consent From	Anaesthesia Inf
Osama El Sayed Reak Elsesy	PEDIATRICS	17741	112386	MANSOOR ISSA HASSAN ISSA SAHED DAD	02-06-2022	4022-SR BED 1	NEURON INSURANCE - ENAYA	11.2.2022	5	Incomplete				seal is missing						
Kasturi Anil Mummigatti	GYNAECOLOGY	17742	115302	DEEMA HASSAN ALI MOHA	02-06-2022	LDR-01 BED 1	NEXTCARE INSURANCE RN3 NETWOR	8.2.2022	2	Complete										
Prashanth Hegde	GYNAECOLOGY	17743	115976	ADEBISI TITILAYO TAIWO	02-06-2022	3082-83 TS BED 1	Delivery Booking- Thumbay University Hospital	8.2.2022	2	Incomplete										
Mshir Khalil Ibrahim	INTERNAL MEDICINE	17748	128004	AMINA ABDULLA MOHAMED ALMULLA	02-06-2022	4025-SR BED 1	Self Payment	8.2.2022	2	Incomplete			Code blue incomplete							
Kasturi Anil Mummigatti	GYNAECOLOGY	17750	128000	BIBI AMINA KHAN ABDULLAH	02-06-2022	3065-66 TS BED 1	Delivery Booking- Thumbay University Hospital	7.2.2022	1	Complete										
Shanthi Therese Fernandez	GYNAECOLOGY	17751	104814	ROMANA AMIR	02-06-2022	LDR-08 BED 8	NEXTCARE INSURANCE RN3	8.2.2022	2	Incomplete				date of discharge is wrong						
Zulekha Banu	GYNAECOLOGY	17753	92623	FATHIMATH NASEERA MOHAMMAD ARIF	02-07-2022	3086-87 TS BED 1	AL BUHAIRA NATIONAL INSURANCE (LIMITED &RESTRICTED NETWOR	7.2.2022	1	Incomplete						date and time				

Figure 16- Current tool for data collection

2. Only pre-intervention data should be used to calculate the compliance. But these study results are post interventional.

RECOMMENDATION

1. Current data collection tool is not optimum: Data collection tool should be improved to cover more parameters as per JCI's recommended medical record audit tool.

S.No	1	2	3	4	5	6
Doctor Name	Pushpa Bhimani	Shameema Asif Muhammed	Wajiha Ajmal	Prashanth Hegde	Shanthi Therese Fernandez	Mohamed Sobhy
Department	GYNAECOLOGY	GYNAECOLOGY	GYNAECOLOGY	GYNAECOLOGY	GYNAECOLOGY	GENERAL SURGERY
IP No.	17581	17582	17584	17586	17588	17589
Hosp No.	126228	89112	125396	126332	108378	125683
Date of Adm.	02-01-2022	02-01-2022	02-01-2022	02-01-2022	02-01-2022	02-01-2022
Adm.Time	12:10 AM	01:00 AM	04:20 AM	05:50 AM	06:50 AM	07:20 AM
Discharged Date	02-02-2022	2.2.2022	02-02-2022	1.2.2022	02-02-2022	02-02-2022
Lenth of stay	1	1	1	1	1	1
Audit Parameter	Finding	Finding	Finding	Finding	Finding	Finding
Patient transfer from- external	N/A	Y	N/A	N/A	N/A	Y
LAMA	N/A	N/A	Y	N/A	N/A	Y
Death summary	N/A	N	N/A	N/A	N/A	N/A
Discharge Summary	Y	Y	N	Y	N	Y
Medication Record	Y	N/A	Y	Y	Y	N
IP Admission Authorisation Form & General Consent	N	N	Y	Y	Y	Y
Informed Consent for Vaginal Delivey	N	Y	N	Y	Y	Y
Surgery Consent	Y	Y	Y	Y	Y	Y
High Risk Consent From	N	Y	N	N/A	N/A	N
Anaesthesia Informed Consent	Y	N	Y	N	N	Y
Pre Anasthetic / Sedation Evaluation	Y	Y	Y	Y	Y	N
Postanaesthetic Care uint (PACU Sheet) & (Pre & Post)	Y	N/A	Y	Y	N	N/A
Pre-operative checklist	Y	Y	N	N	Y	Y
Safe Surgery Checklist	Y	Y	N	N	Y	N
Anaesthesia Record Sheet	Y	Y	Y	Y	Y	N
Operative notes	Y	Y	Y	N	Y	N
Adult Venous Thromboembolism Risk Assessment	Y	N/A	N	N/A	N	Y
Blood Transfusion	N/A	N/A	N/A	N	Y	Y
New Born Chart	Y	Y	Y	N	Y	Y
Discharge Check list	Y	Y	N	N	Y	Y
Integated care plan	Y	Y	Y	N	Y	N
Patient & Family Education Documentation	Y	Y	Y	Y	Y	Y
IN- House patient Transfer From	Y	N/A	N	Y	Y	N
Total number of applicable parameters	19	17	20	18	19	21
Total number of Complaint parameters	16	14	11	10	14	13
% Compliance	84%	82%	55%	56%	74%	62%

Figure 17-Recommended tool for data collection

2. Data aggregation and analysis methodology must be improved so that a quantifiable value for medical record compliance can be obtained.
3. Training- to be enhanced for nursing staff and doctors regarding appropriate recording of procedures, care plan and signatures and for management of vulnerable patients including marking of files.
4. List of Abbreviations- Allowed list of abbreviations needs to be programmed into the system o that error of using abbreviations that are not allowed could be minimized.
5. Seminar Sessions- Should be conducted regarding the importance of complete and correct documentation.
6. Sensitization- Consultants should be sensitized for counter signing of doctor's notes within the required time frame.
7. Audits- Regular assessments can be made through audit for randomly chosen files to ensure high standards.

Certain non-specific recommendations that could increase efficiency and quality of services

8. Standardization- Hospital-wide standardization of the Discharge summary can be beneficial.
9. Nurses need to be trained regarding mandatory pain assessment and infection control.
10. Documentation methodology needs to be updated.
11. Rewarding the best performing Department Unit could prove effective in bringing the required changes.

RECOMMENDATIONS FOR MRD

1. TAT for closing of gaps and retrieval of files in case of emergency is not defined in the department.
2. Gaps in the security system- Absence of electronic lock on the main door. Since MRD has an issue of security and confidential documents, an electronic door operator could be helpful.
3. Human resource has not received training and/or re-orientation in a couple of years.
4. The discharged long-stay patient's records have not been scanned since previous year of 2021. (Oct-Dec)
5. Huge volumes of patient records are present for LTC patients which were observed to be unassembled/disorganized
6. Sequence wise stacking could be done. While an effort is made but the sequence is not maintained for ease of retrieval when required.

Figure 18- Image of Mechanical door for MRD

Figure 19- Image of layout for racks in MRD

CORRECTIVE IMPLEMENTATION PHASE

- MRD committee was formed started in the month of June and regular sharing of audit results is done in the committee meetings.

- Quality Indicators were finalized and report were prepared to conduct the performance assessment.
- Open file audit is performed every day by a Medical Officer.

HIMS & SEHATAK

The Hospital Management System (HIMS) is an integrated information system used to manage all elements of a hospital's operations, including medical, financial, administrative, legal, and compliance. Electronic health records, business intelligence, and revenue cycle management are all part of the hospital management system. Using the hospital information management system has often led to an increase in the quality of healthcare services provided. It also lowers cost of operationas, and improves the cycle of revenue.

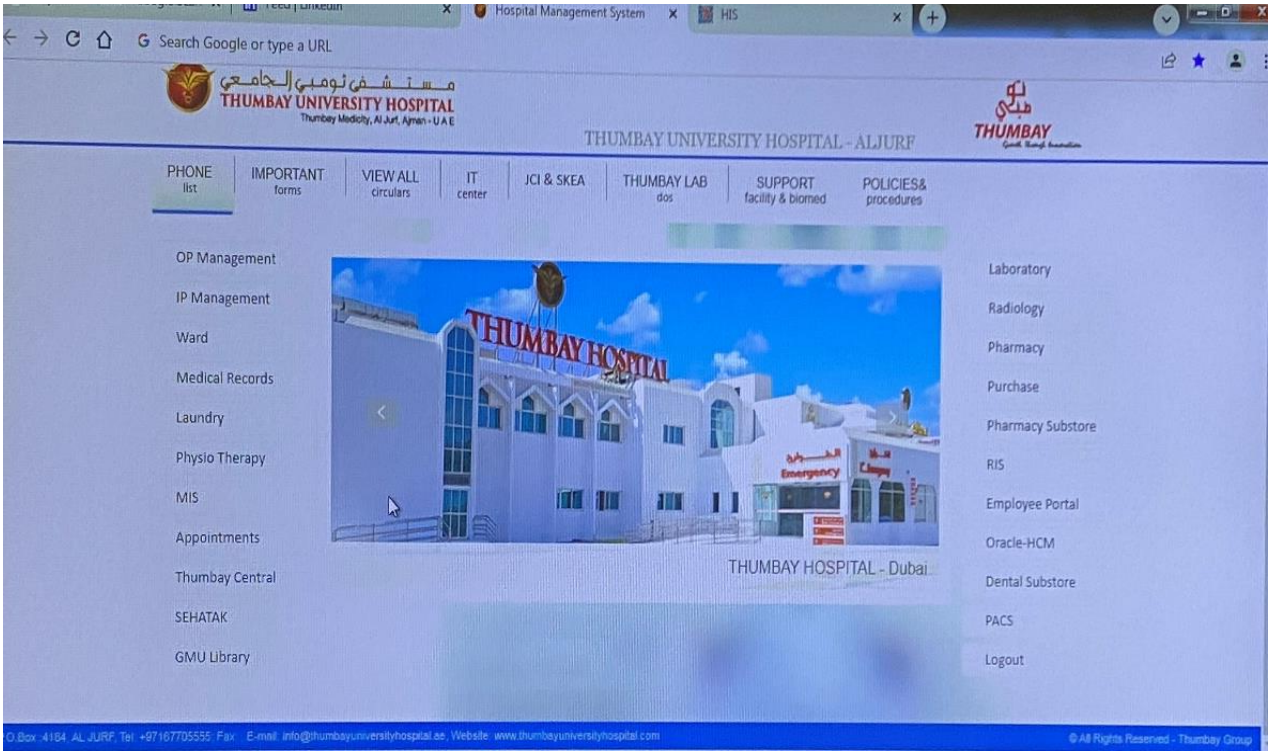

Figure 20- HIMS Interface at TUH

Modules in the HIMS

- Patient Registration desk
- Scheduling of Appointment
- OPD Management
- IPD Management
- Payment processing

- Discharge Summary generation
- Laboratory Management
- Radiology Management
- Pharmacy Management
- Blood Bank
- Electronic Medical Records of patient files
- Ward and Bed management
- Operation Theatre Scheduling
- Inventory and Procurement
- Doctor Fee management
- Pay Roll Management
- Diet and Kitchen management
- Housekeeping and linen & Laundry
- CSSD- Central Sterile Supply Department
- Bio waste management
- Claim and Asset Management
- Security

SWOT ANALYSIS of a product of Thumbay Technologies

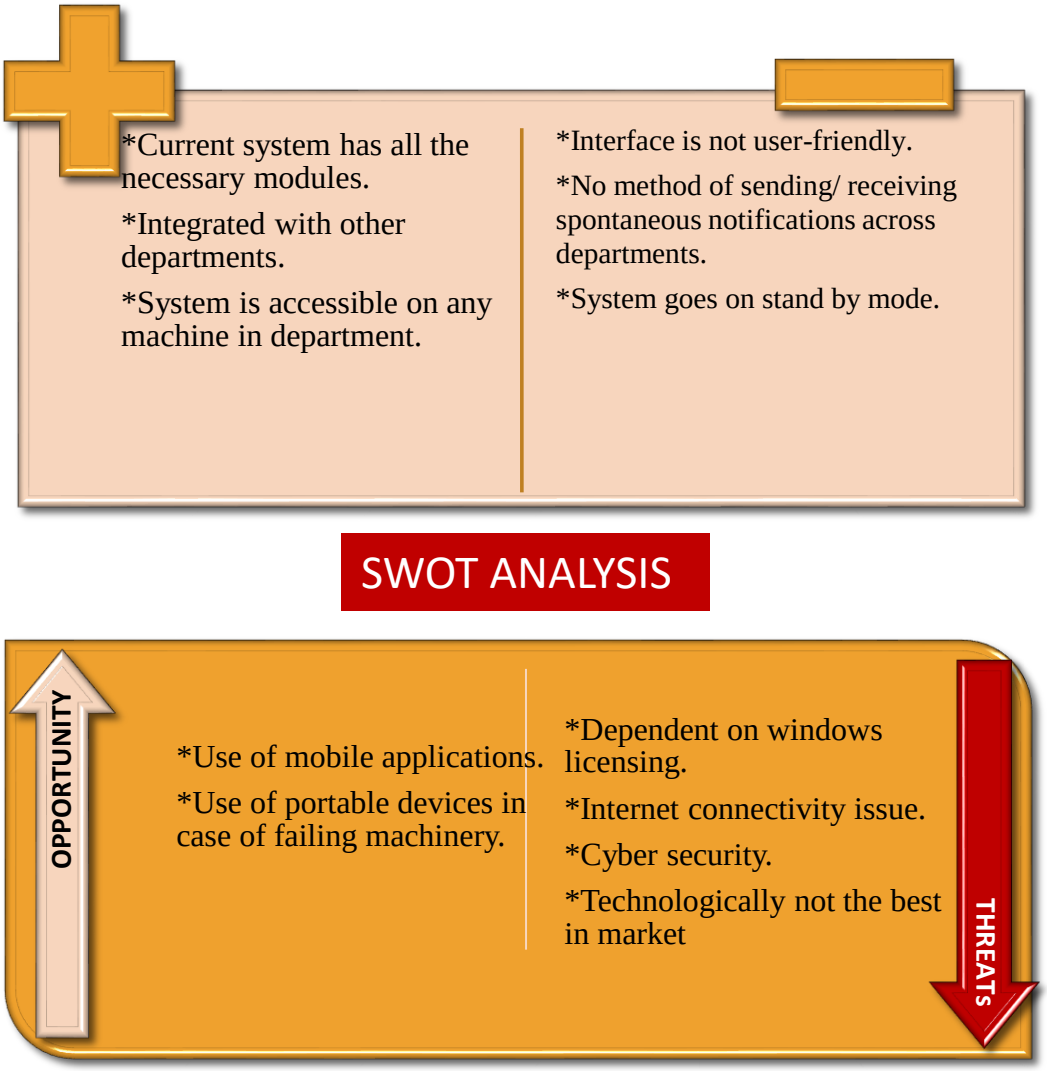

Figure 21- SWOT Analysis for HIMS

OBSERVATION OF RECORDS IN HIMS

- Allergy assessment & pain score is sometimes not recorded.
- The abbreviations that are not allowed are being used in clinician's assessment.
- Patient's identification documents (Emirates ID, passport) are not scanned.
- The process of accessing files is time-consuming and non-intuitive.

CONCLUSION

This study was carried out to determine if the documentation in medical records complies with the required requirements of policy.

Although there is need for improvement in the other areas of concern, there is a high rate of compliance in TUH papers (82%), which is notable. Health care professionals were found to be uninformed of the need of accurate paperwork, time stamping, signage, and authorized person's name,

according to document- and error-wise data analysis. To assure quality, continuity, evaluation, and proof of care, MRD and IT accelerate periodic data assessment. Complete treatment sheets, prompt signatures from physicians and consultants, and accurate permission form paperwork might enhance therapy analysis and make it easier to grasp when revisiting throughout recovery.

With HIMS, electronic medical records come with a number of benefits, including time savings, increased effectiveness, less effort, lower labor expenses, and decreased scanning costs. Without having to ask multiple departments for access to the medical files, it was also possible to make a patient's medical history readily available outside of the hospital's walls. However, it is important to guarantee that new services are introduced and that any modifications are reoriented to.

ETHICAL CONSIDERATIONS

Due considerations of confidentiality and privacy of information were undertaken in this study.

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