

A STUDY ON TURN AROUND TIME MONITORING IN RADIOLOGY, PHARMACY AND WELLNESS DEPARTMENT IN A MULTISPECIALTY HOSPITAL AT COCHIN

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ABSTRACT

This article delves into the critical importance of turnaround time in healthcare, focusing on radiology, pharmacy, and wellness departments. Through an exploration of strategies, challenges, and innovative solutions, it highlights the significance of efficiency in improving patient care outcomes. Drawing from literature reviews and analysis of primary data, the study identifies major findings and offers practical suggestions to address delays in service delivery. From enhancing patient education to implementing process optimizations and staff training, the article advocates for a multidimensional approach to streamline workflows and minimize turnaround times. Ultimately, prioritizing efficiency in healthcare delivery not only enhances operational performance but also elevates the quality of patient-centered care.

INTRODUCTION

In the fast-paced landscape of healthcare, efficiency is paramount. Timely delivery of services not only improves patient satisfaction but also plays a crucial role in diagnosis, treatment, and overall healthcare outcomes. In this article, we delve into the realm of turnaround time within three critical departments: radiology, pharmacy, and wellness. By examining strategies, challenges, and innovative solutions, we aim to shed light on how these departments can streamline processes, minimize delays, and ultimately enhance patient care.

OBJECTIVE

The objective of this article is to explore the significance of turnaround time in healthcare, with a specific focus on radiology, pharmacy, and wellness departments. By analyzing the importance of efficiency in these areas, we seek to identify key strategies and challenges while providing insights into innovative solutions that can optimize turnaround time and ultimately improve patient care outcomes. Through this exploration, healthcare professionals and stakeholders can gain a deeper understanding of the critical role played by efficient processes in enhancing overall healthcare delivery.

STATEMENT OF THE PROBLEM

In the healthcare industry, the efficiency of service delivery is often hindered by prolonged turnaround times within key departments such as radiology, pharmacy, and wellness. Delays in these areas not only impact patient satisfaction but also pose significant challenges to timely diagnosis, treatment, and overall healthcare outcomes. The problem lies in the complex processes, bottlenecks, and resource constraints that contribute to these delays, thereby highlighting the urgent need for systematic improvements. Addressing these challenges requires a comprehensive understanding of the factors influencing turnaround time and the implementation of targeted strategies to optimize workflow efficiency in each department.

REVIEW OF LITERATURE

According to **Rimma Perotte et al.** Topic: Improving emergency department flow: reducing turnaround time for emergent CT scans (2018). This article addresses the urgent need to improve patient flow in congested U.S. emergency departments by tackling prolonged turnaround times for imaging tests, specifically computed tomography (CT) scans. Over an eight-month period pre-intervention, the average time from CT order to the radiologist's final report was 5.9 hours. After implementing a multi-disciplinary intervention, involving various healthcare professionals and technical solutions, there was a significant 1.2-hour reduction in CT turnaround time. This improvement occurred despite a 13.8% increase in the number of CT scans ordered, indicating enhanced efficiency in the diagnostic process.

According to **Jayne Blackburn et al.** Topic: A project exploring the extended role of pharmacy assistants as 'medicines assistants' (MAs) on inpatient wards in UK hospitals (2018). The *European Journal of Hospital Pharmacy* (2018) discusses a project exploring the extended role of pharmacy assistants as 'medicines assistants' (MAs) on inpatient wards in UK hospitals. MAs acted as a liaison between wards and the pharmacy, reducing morning medication administration time (74.5 to 60.8 min per round). They saved nursing time and performed 17.4 hours of medicines-related tasks weekly per ward. The study highlights the need for clearer training and governance for patient-facing roles, emphasizing the potential of MAs to bridge the gap between nursing and pharmacy professionals.

According to **Bernard Van Den Berg et al.** Topic: Attributing a monetary value to patients' time: A contingent valuation approach (2017). Since Grossman's seminal work in 1972, the significance of patient time investment in health production has been evident, encompassing admission, travel, waiting, and treatment times. Despite its importance, patient time is often overlooked in economic analyses, potentially skewing results and policy recommendations. Valuing patient time poses challenges, particularly for those not in the labor market. This study proposes a comprehensive approach using contingent valuation, applied to 238 Dutch patients across various departments. Results highlight the highest valuation for waiting time (€30.10 per hour), with travel and treatment times equally valued at €13.20 and €13.32 per hour, respectively. Encouraging further research, this method offers insights into how different patient subgroups value their time.

METHODOLOGY

RESEARCH DESIGN: Descriptive research

SAMPLING METHOD: simple random sampling

SAMPLE SIZE: 1536 (Radiology), 2973 (IP pharmacy to wards), 10 (Wellness Department)

METHODS OF DATA COLLECTION: In this study, only primary data were used

TOOLS: Turnaround Time Analysis

ANALYSIS

Table showing average turnaround time in radiology

S.NO	CATEGORY	AVERAGE		
		BILLING TIME	PROCEDURE TIME	TURN AROUND TIME
1	USG OP 125	01:07	00:14	01:30
2	USP IP 93	00:02	00:13	00:16
3	X-RAY OP 400	00:29	00:06	00:36
4	X-RAY IP 400	00:02	00:07	00:10
5	X-RAY ED 98	00:01	00:08	00:06
6	CT OP 100	00:58	00:17	01:15
7	CT IP 100	00:02	00:13	00:16
8	CT ED 7	00:01	00:28	00:30
9	MRI OP 100	01:43	00:30	02:13
10	MRI IP 100	00:05	00:36	00:41
11	MRI ED 13	00:05	00:42	00:47

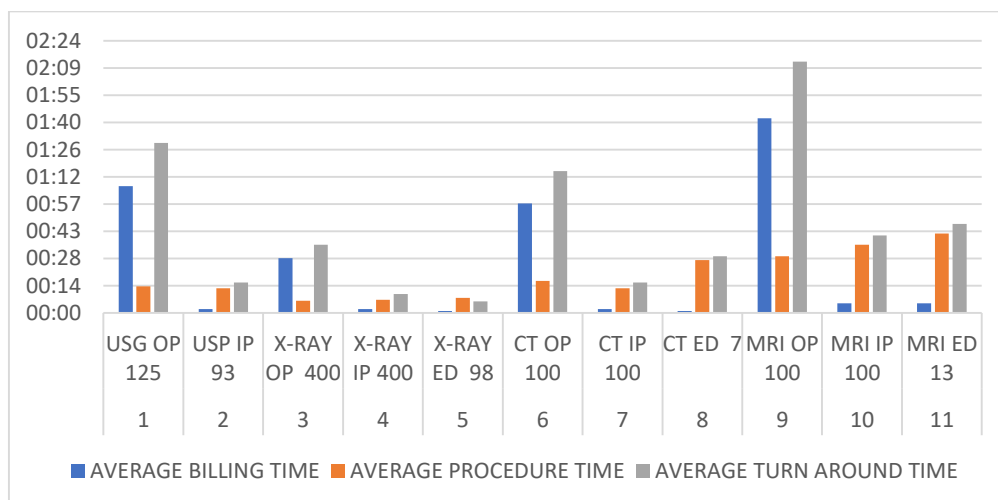


Table showing average turnaround time for medicines deliver in IP wards

S.NO	CATEGORY	AVERAGE		
		BILLING TIME	PACKING TO DELIVERY	TURN AROUND TIME
1	ROUTINE MEDICINE 116	00:18	03:12	03:31
2	STAT MEDICINE 47	00:40	01:35	02:15
3	DISCHARGE MEDICINE 5	00:02	01:46	01:49

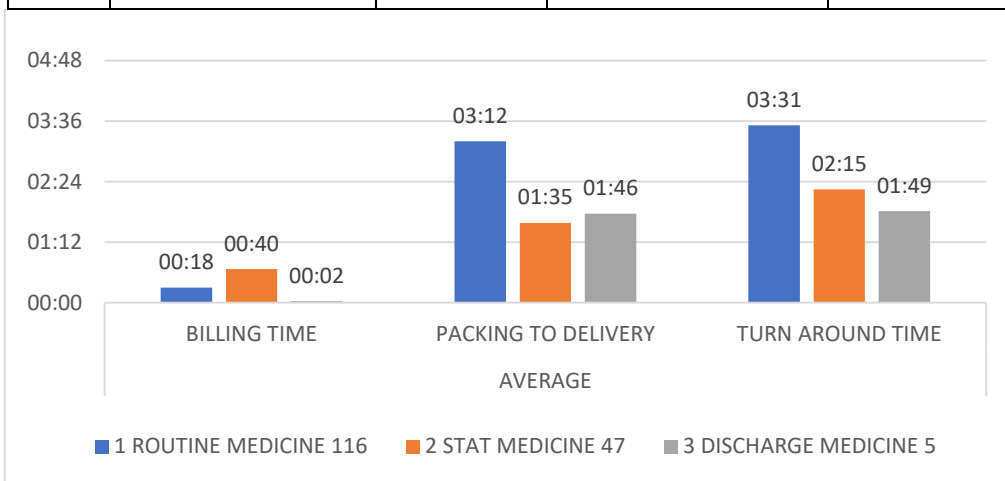
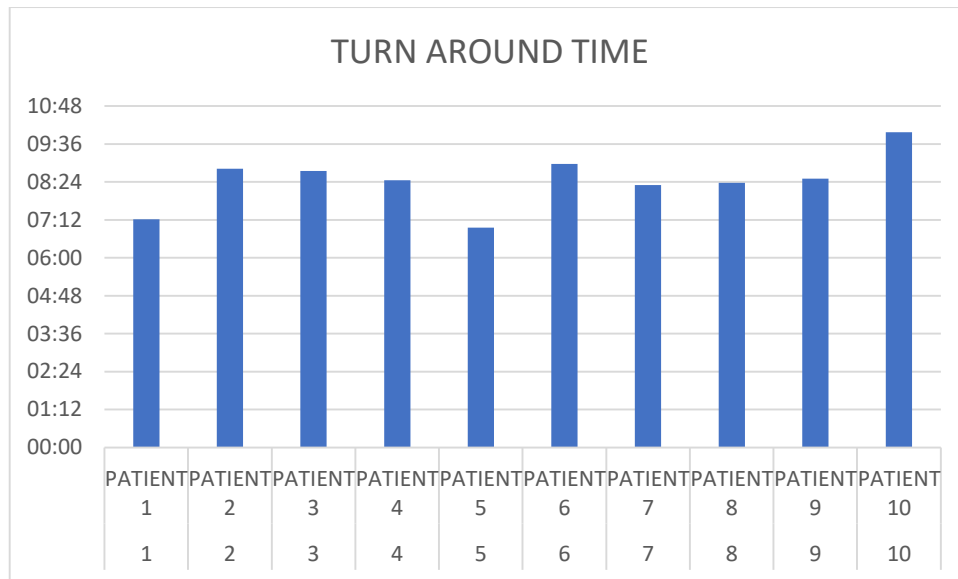


Table showing the average turnaround time of platinum patients waiting in wellness department from billing time to end time

S.NO	PATIENT	TURNAROUND TIME
1	PATIENT 1	7:13
2	PATIENT 2	8:49
3	PATIENT 3	8:45
4	PATIENT 4	8:27
5	PATIENT 5	6:57
6	PATIENT 6	8:58
7	PATIENT 7	8:18
8	PATIENT 8	8:22
9	PATIENT 9	8:30
10	PATIENT 10	9:58
AVERAGE TURN AROUND TIME		8:25



FINDINGS:

MAJOR FINDINGS IN RADIOLOGY

1. The average wait time in USG OP is 1 hour and 7 minutes due to patients not being informed about their full bladders before undergoing USG Abdomen procedures, as healthcare professionals fail to educate them beforehand.
2. The average wait time for an MRI-OP is 1 hour and 43 minutes, mainly due to patients' lack of cooperation, fear, and anxiety stemming from inadequate explanation of the procedure by technicians, ignorance of fasting requirements when making online appointments, and tardiness in arriving for scheduled procedures.

MAJOR FINDINGS IN IP PHARMACY TO WARDS

1. Routine medicines are mistakenly designated as stat medications in the nursing station, leading to occasional billing errors for routine medicines as stat medications in the inpatient pharmacy, while delays in medicine packing result from insufficient supplies, and consumables for patients are being redundantly indented multiple times in the nursing station.
2. The delay in arranging medicines at the nursing station followed medicine delivery, as only one attendant was available.

MAJOR FINDINGS IN PLATINUM PATIENTS WAITING IN WELLNESS DEPARTMENT

1. Platinum patients are experiencing delays in receiving outpatient consultations in CT, ENT, and other specialties.
2. After receiving consultation and undergoing scanning in a certain department, patients are delaying their next consultations and scans.

SUGGESTIONS:

1. By giving patients information on process instructions from medical experts, they can avoid being ignorant of what to do before a procedure begins and wait a shorter amount of time.
2. Inadequate network connections need to be maintained and fixed right away. If the issue persists, the department should be given access to alternative systems. It is also required that staff members handling the systems receive the necessary training and conduct thorough checks before turning them on.
3. If an additional source is available, it can be used to address inadequate machine source. Alternatively, IP patients can be scheduled for a later time of day, night, or evening.
4. Implement standardized medication classification and labelling, train staff on routine vs. stat medications, implement double-check procedures, conduct regular audits. Enhance inventory management in the pharmacy to prevent delays. Nurses check and order patient consumables during daily morning rounds.
5. The wellness department should establish a timeframe for referring platinum patients to the OP consultation to minimize waiting time.
6. Coordinators must be alert and give awareness to patients about the importance of being punctual for next consultations and procedures.

CONCLUSION

In conclusion, the analysis of patient waiting times is crucial for healthcare providers striving to optimize the patient experience and enhance health outcomes. By understanding and controlling lengthy wait times, organizations can make targeted improvements to their facilities and processes, ultimately delivering timely, high-quality care. This not only fosters patient satisfaction but also empowers clinicians to make informed decisions, elevating the overall quality of healthcare delivery. Therefore, prioritizing the analysis of patient waiting times is paramount in achieving excellence in patient care and ensuring optimal health outcomes.

BIBLIOGRAPHY

1. *Radiology report turnaround time: effect on resident education.* Eric England, Jannette Collins, Richard D White, F Jacob Seagull, John Deledda. *Academic radiology* 5), 662-667, 2015
2. *Attributing a monetary value to patients' time: A contingent valuation approach* Bernard Van Den Berg, Amiram Gafni, *France Portrait Social Science & Medicine* 179, 182-190, 2017
3. *Improving emergency department flow: reducing turnaround time for emergent CT scans.* Rimma Perotte, Greg O Lewin, Ujwala Tambe, Jamie B Galorenzo, David K Vawdrey, Olabiyi O Akala, Jasnit S Makkar, Dana J Lin, Lisa Mainieri, Betty C Chang. *AMIA Annual Symposium Proceedings* 2018, 897, 2018
4. *A project exploring the extended role of pharmacy assistants as 'medicines assistants' (MAs) on inpatient wards in UK hospitals.* Jayne Blackburn, William Gray, Wasim Baqir, Elaine Henderson, David Campbell *European Journal of Hospital Pharmacy*, 2018
5. *Applying lean management to reduce radiology turnaround times for emergency department.* Chiara Verbano, Maria Crema. *The International Journal of Health Planning and Management* 34 (4), e1711-e1722, 2019

6. *An Important and Often Ignored Turnaround Time in Radiology–Clinician Turnaround Time: Implications for Musculoskeletal Radiology*. Michael Mayer, Ronnie Sebro *Journal of the Belgian Society of Radiology* 103 (1), 2019
7. *Carmen Guadalupe Rodriguez-Gonzalez, Ana Herranz-Alonso, Vicente Escudero-Vilaplana, Maria Aranzazu Ais-Larigoitia. Journal of evaluation in clinical practice* 25 (1), 28-35, 2019
8. *Heather Torbic, Leticia Vargas, Alyssa Chen American Journal of Health-System Pharmacy* 77 (15), 1189-1190, 2020
9. *Sony Wiraganda Journal for Quality in Public Health* 3 (2), 455-462, 2020
10. *Suzan Hammoudeh, Abdullah Amireh, Saad Jaddoua, Lama Nazer, Enas Jazairy, Ronza Al-Dewiri. Hospital Pharmacy* 56 (6), 737-744, 2021