

Patient flow in Outpatient Department: A Turn-around Time- Study

Submitted by-
Amishi Singh
1673

Under the guidance of
Dr NUTAN JAIN
PROFESSOR

Introduction

- ▶ Outpatient departments serve as the first point of contact between patients and healthcare services.
- ▶ The OPD services include:
 - ▶ registration,
 - ▶ consultation,
 - ▶ diagnostics, and
 - ▶ pharmacy

OPD Process



Objectives of the Study

4

Research Question:

- ▶ How can operational efficiency and better time management be done in OPD of a 300 bedded government hospital?

The objectives of the study are

- ▶ To review the Indian Public Health Standards related to managing services in 300 bedded government hospital.
- ▶ To assess the time taken by patients at each service point in the OPD, from registration to exit.
- ▶ To identify key delays in OPD processes using turn-around-time analysis comparing with standard time to be taken.
- ▶ To suggest ways to increase operational efficiency and time management in OPD.

Review of Literature

5

S No	Title & Year	Author(s)	Objectives	Methods	Findings
1	Reducing Outpatient Waiting Time: A Simulation Model (2002)	Wijewickrama & Takakuwa	To explore the use of simulation in minimizing OPD patient wait times and improving process efficiency.	Simulation modeling of OPD operations.	Simulation models effectively identified bottlenecks, reducing waiting time and improving appointment scheduling.
2	Outpatient Waiting Time: The Role of Queuing Theory (2006)	Al-Omari & Al-Omari	To apply queuing theory to understand and improve patient flow in OPDs.	Application of queuing theory and mathematical modeling.	Queuing theory helped optimize resource allocation and suggested optimal counter distribution to reduce wait time.
3	Patient Waiting Time in a Tertiary Hospital OPD: A Time Motion Study (2011)	Anand et al.	To measure patient waiting time and identify delays in OPD service delivery.	Time-motion study with observation and data recording.	Identified long waiting times especially before consultation; recommended improved queue systems and manpower planning.
4	Evaluation of OPD Services in Public Health Facilities (2013)	Gupta et al.	To assess service delivery challenges in OPDs of public health facilities.	Facility surveys, interviews, and observational study.	Found irregular staff availability and overcrowding as key issues; emphasized need for time-bound and accountable service delivery.
5	Study on Patient Flow and Time Management in OPD (2014)	M. Rajaram & B. Manjula	To analyze time spent by patients in each OPD service component and suggest improvements.	Time tracking of patient journey and service-wise time allocation.	Consultation and pharmacy processes were delayed due to paper-based prescriptions and manual file handling.
6	Assessment of OPD Waiting Time and Satisfaction (2016)	Abiola et al.	To assess patient satisfaction related to OPD waiting time.	Patient exit interviews and time tracking.	Dissatisfaction with wait time; proposed digital ticketing and a triage system to improve service speed. 6/23/2025

Review of Literature

6

S No	Title & Year	Author(s)	Objectives	Methods	Findings
7	Reducing OPD Overcrowding through Lean Principles (2017)	Chatterjee et al.	To apply lean methodology to reduce time wastage and OPD congestion.	Lean Six Sigma approach with process mapping and waste elimination.	Streamlined patient flow by eliminating non-value-adding steps; significantly reduced total service time.
8	Impact of E-Hospital System on Patient Waiting Time (2019)	Singh & Kumari	To evaluate the impact of hospital ERP systems on OPD efficiency.	Pre- and post-implementation analysis of patient records and wait times.	E-hospital systems improved documentation, appointment scheduling, and reduced delays.
9	Time Motion Study in a Government Hospital OPD (2021)	Sharma et al.	To identify time utilization patterns of patients in OPD settings.	Time-motion study and patient pathway tracking.	Found that 65% of total time was spent waiting; recommended structured appointment systems and better staff deployment.
10	A Study of Patient Satisfaction and Time Gaps in OPD (2023)	Verma & Deshmukh	To study patient satisfaction levels and identify gaps in service timelines.	Mixed-methods: quantitative satisfaction survey and qualitative feedback.	Delays were most common in diagnostics and pharmacy; suggested that automation and digitization improved overall service flow.

Methodology

- ▶ Study area: Outpatient Department (OPD) of a 300 bedded government district hospital, Rajnandgoan, Chhattisgarh
- ▶ Duration: March -June 2025
- ▶ Descriptive and quantitative in nature
- ▶ Study respondents: patients who registered with the OPD of the hospital first time or follow up visits, and consented
- ▶ Sample size: 200 patients
 - ▶ observed over a period of 60-70 days.

Methodology

- ▶ Data collection methods included:
 - ▶ Review of relevant documents
 - ▶ Patients' Observation
 - ▶ For patients' observation a datasheet was developed for time duration recordings in the whole process.
- ▶ Data Analysis
 - ▶ Total OPD Turnaround Time= TAT (Total) = Time of Exit from OPD – Time of Registration
 - ▶ TAT (Registration) = Time of Token Issued – Time of Arrival
 - ▶ TAT (Consultation) = Time of Exit from Doctor's Chamber – Time of Entry into Consultation
 - ▶ TAT (Diagnostics) = Time Report Received – Time Sent for Test
 - ▶ TAT (Pharmacy) = Time Medicine Dispensed – Time Reached Pharmacy Counter

Results: Turn-Around Time

	OPD Services (time recorded in minutes)			
	Registration	Consultation	Diagnostic	Pharmacy
<i>n=</i>	200	200	140	180
Less than or within the standard time	200 (100%)	170 (85%)	60 (43%)	30 (17%)
Average Time (Minutes)	2	10 [10 (5%)]	25 [10 (8%)]	7 [30 (17%)]
More than standard time	0	20 (10%)	96 (68%)	150 (83%)

Results: Reasons for Delay

Consultation	Diagnostics	Pharmacy
Long queue (unstructured) of patients due to late coming of medical officers	Patient load because inadequate staff like one LT has to assist for X ray, sonography, etc	Drug stock issues
Lack of triage by specialty	No priority setting of patients as per their urgent requirements	Queue mismanagement
		Manual billing and dispensing

Suggestions for Time management

- ▶ Introduction of triage system in the hospital is a quality improvement action. It can be more explicit to provide quick and easy access to the patients to contact the relevant unit.
- ▶ Adequate human resources for health is mandatory to manage the time and help the patients by providing prompt services.
- ▶ To prioritize the critical patients for diagnostic services as per their conditions may help them effective time management.
- ▶ Some staff may be dedicated for supervising the queuing system in peak hours.

Conclusion

- ▶ Most of the registration and consultation procedures ran smoothly, but there were notable delays in the pharmacy and diagnostic services.
- ▶ 10% of patients experienced delays in consultation services
- ▶ 68% of patients experienced delays in diagnostics.
- ▶ 83% of patients experienced delays in pharmacy services
- ▶ Staffing shortages, manual billing, inadequate triage, and ineffective queue management were all contributing factors.
- ▶ Implementing triage systems, availability of adequate diagnostic personnel, and implementing queuing system under supervision of some staff members.