

A Study on Out-Patient Department to In-Patient Department Conversion Rate, in a Tertiary Care Hospital, Gangtok

Kreeti Pal¹, Dr. Ashish Kumar², Anusika Sharma³, Dr. Sanjay Kumar⁴

¹Assistant Professor, Department of Hospital Administration, Sikkim Manipal Institute of Medical Sciences, SMIMS, SMU Gangtok
Corresponding Author Email: [kreeti.p\[at\]crh.smu.edu.in](mailto:kreeti.p[at]crh.smu.edu.in)

²Department of Hospital Administration, Sikkim Manipal Institute of Medical Sciences, SMIMS, SMU Gangtok
Email: [drlamba5693\[at\]gmail.com](mailto:drlamba5693[at]gmail.com)

³Department of Hospital Administration, Sikkim Manipal Institute of Medical Sciences, SMIMS, SMU Gangtok
Email: [anusika.s\[at\]smims.smu.edu.in](mailto:anusika.s[at]smims.smu.edu.in)

⁴Professor and Head Department of Physiology, Sikkim Manipal Institute of Medical Sciences, SMIMS, SMU Gangtok
Email: [sanjay.k\[at\]smims.smu.edu.in](mailto:sanjay.k[at]smims.smu.edu.in)

Abstract: *The Out-patient Department (OPD) is the primary point of entry for cases seeking medical services in a hospital. Cases from various locales with different health concerns come to the hospital seeking medical attention. The conversion rate from the Out-patient department (OPD) to the In-patient Department (IPD) provides insights into the number of patients who have actually been converted into the IPD which will impact the overall profit of the hospital. This study aims to assess the Out-Patient Department (OPD) to In-Patient Department (IPD) conversion rate as a key performance indicator in a tertiary care hospital in Gangtok. The objectives were to identify the total number of OPD visits, the number of patients admitted through OPD, and to calculate the overall conversion rate. An observational study design was adopted, and conducted at a tertiary care hospital in Gangtok, covering data from January to December 2023. It includes 12 clinical departments that admit directly from OPD, such as Medicine, Surgery, Paediatrics, and Obstetrics & Gynaecology. Departments like Emergency and Ophthalmology were excluded. Data were collected from the Medical Records Department (MRD) with proper administrative permission and analysed using standard statistical methods to determine department-wise conversion rates. A total of 107,773 OPD visits were recorded, out of which 12,146 patients were admitted, yielding an overall conversion rate of 11.2%. General Medicine (24.08%), Paediatrics (21.23%), and Surgery (13.39%) had the highest conversion rates. Departments like Neurosurgery, despite fewer OPD visits, showed high conversion percentages, indicating critical case severity. In contrast, departments such as Dental and Dermatology showed minimal conversions. This study highlights the significance of tracking OPD to IPD conversions for evaluating clinical efficiency, resource allocation, and revenue optimization. The insights can support informed decision-making to enhance hospital operations and patient care outcomes.*

Keywords: conversion rate, OPD, IPD, Tertiary Care Hospital

1. Introduction

In the majority of hospitals, the Outpatient Department (OPD) serves as the initial point of contact for patients seeking medical consultation, routine diagnostic tests, and follow-up treatment (Spinner et al., 2023). Conversely, the Inpatient Department (IPD) is for patients that need more severe intervention like surgery, complex diagnostics, or around-the-clock monitoring (Spinner et al., 2023). The ratio of patients transferring from OPD to IPD, also known as the OPD to IPD conversion rate, is a key indicator of the extent to which a hospital is able to transfer patients as per clinical need.

This rate of conversion is particularly important in ascertaining the efficiency of hospitals, patient pathways, and the aptness of services provided. There has been little literature dealing with these transitions in multi-specialty tertiary care hospitals particularly (Chatterjee et al., 2018). Attaining more clarity on these trends can enable hospitals to rationalize activities, more effectively deal with resources, and determine areas where changes have to be made in the process of admitting patients.

A number of factors may impact a patient's refusal of admission even after receiving medical recommendations. Sharma et al.'s (2025) recent study identified financial concerns, diagnostic follow-up delays, preference for outpatient procedures, and second opinions as some of the most prevalent reasons for hospital avoidance. Mitigation of these issues through enhanced communication, patient support networks, and efficient services can result in greater satisfaction and more efficient transitions to inpatient care.

Bagrodia and Mallya (2025) also noted the need for outpatient and inpatient services to be integrated. Their analysis of employer based insurance use data indicated that well-developed outpatient systems can decrease unnecessary admissions and optimize inpatient forecasting to benefit care delivery and financial planning.

Tracking the rate of OPD to IPD conversion over time can provide hospitals with useful insights. Changes can indicate seasonal variation in patient demand, care coordination bottlenecks, or disease prevalence changes (Bagrodia & Mallya, 2025; The Healthcare Manager, 2018). It allows for real-time decisions about staffing, infrastructure, and service delivery realignment.

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In addition to the operational advantages, the conversion rate matters to clinical and financial performance. Grace et al. (2012) highlighted the OPD's ability to enable elective admissions and provide cheaper care. Because inpatient services usually yield higher margins, maximizing the conversion rate also supports hospital revenue planning and sustainability.

Even though outpatient vs. inpatient care has been the subject of extensive debate particularly in surgical specialties very little research has systematically investigated OPD to IPD conversion as an important performance indicator by departments (Qin et al., 2021; Brabrand et al., 2019). Previous research also suggests that adverse consultation experience, delays in diagnosis, and cost impediments most of the time dissuade patients from going ahead with suggested admissions (Chatterjee et al., 2018). Nonetheless, organized admission procedures, patient education, and accelerated diagnostics have proven to increase conversion efficiency (Brabrand et al., 2019).

As healthcare continues its trend towards outpatient-centered models, hospitals are required to balance optimizing OPD processes while maintaining IPD capacity (Deloitte Insights, 2020; Spinner et al., 2023). This research attempts to quantify OPD volumes, calculate the conversion rate to IPD admissions, and examine the underlying factors driving this shift at a tertiary care hospital in Gangtok. Doing so will help to avail evidence-based information for hospital administrators to utilize in improving patient care pathways, operational planning, and fiscal sustainability.

2. Methodology

The present observational study was carried out at the Central Referral Hospital in Gangtok, with an emphasis on departments that accept patients straight from the outpatient department (OPD). Specialities such as cardiology, ENT, neonatology, medicine, surgery, neurosurgery, orthopaedics, paediatrics, psychiatry, obstetrics & gynaecology, dentistry, dermatology, and respiratory medicine were included in the study, while the departments like emergency, gastroenterology, ophthalmology, and physiotherapy were excluded from the study. After obtaining the approval from the Institutional Ethics committee and the concerned higher authorities, data was collected from the Medical Records Department (MRD) that included the number of OPD-to-IPD admissions and overall OPD attendance for the specified study duration i.e., January to December 2023. The collected data was entered in required format of an excel file, followed by the data cleaning to obtain the OPD/IPD census. The proportion of OPD visits that resulted in inpatient admissions was then determined using standard conversion rate formulas, and a CONSORT-style summary was created to explain how patients moved through the study. After tabulating the total OPD volume, the subset admitted, and their conversion rates. This methodical approach guaranteed transparency and reproducibility through standardised data collection and analysis procedures and enabled a clear, department-wise understanding of conversion dynamics.

3. Results and Findings

Table 1: Table showing the total number of out-patient visited the Out-patient department

Dept/ Month	Cardio	ENT	MED	SURG	NEURO	ORTHO	PAED	PSY	OBC	DENTAL	DERMA	Resp.Med
JAN	96	633	1317	831	116	818	672	338	1330	389	590	227
FEB	107	759	1471	734	98	821	625	353	1340	353	572	253
MAR	115	816	2027	853	99	1080	1004	403	1524	426	759	307
APR	185	741	1949	839	131	1022	857	386	1391	418	770	283
MAY	101	935	2016	930	165	1269	906	502	1453	444	908	257
JUN	112	952	2141	1104	200	1275	846	448	1454	521	1089	291
JUL	83	1033	2362	1046	195	1251	960	419	1633	566	1141	283
AUG	42	1202	2618	937	218	1143	1207	401	1713	544	1069	318
SEP	108	1338	2574	1111	254	1161	1048	593	1564	475	902	298
OCT	75	918	1530	751	179	812	683	332	1126	407	683	241
NOV	49	668	1209	728	127	821	483	316	1034	427	595	245
DEC	54	609	1062	656	31	745	556	330	969	334	427	204
Total	1127	10604	22276	10520	1813	12218	9847	4821	16531	5304	9505	3207

Table 1 shows the total number of patients visiting the outpatient department (OPD) varied significantly across specialties. **General Medicine** had the highest patient volume with **22,276 visits**, followed by **General Surgery** with **16,531 visits** and **Paediatrics** with **12,218 visits**, reflecting their central role in patient care. Departments like **Orthopaedics** (9,847) and **Obstetrics & Gynaecology** (10,520) also recorded substantial outpatient traffic. In contrast, specialties

such as **Cardiology** (1,127), **Dermatology** (3,207), and **Dental** (1,813) had lower OPD visits, indicating a smaller outpatient demand. The steady monthly fluctuations suggest seasonal trends, especially in paediatrics and medicine, which likely correspond to changes in disease patterns. Overall, this data highlights the distribution of patient flow and helps identify departments that require greater resource allocation to manage high outpatient volumes effectively.

Table 2: Table showing the total number patient admitted from the Out-patient department

Total No. of Patient Admitted from Out-Patient Department													
DEPT / MONTH	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CARDIOLOGY	17	20	7	0	10	1	0	0	0	0	2	1	58
E.N.T	11	15	10	8	21	16	15	14	41	14	17	6	188
MEDICINE	350	362	469	457	520	444	472	568	522	438	408	356	5366
SURGERY	107	89	116	109	107	159	131	158	126	117	101	89	1409
NEURO SURGERY	32	11	8	15	16	27	42	25	30	28	17	0	251
ORTHOPEDIC	42	37	42	35	51	59	38	49	47	37	38	40	515
PAEDIATRICS	146	128	191	171	187	208	190	229	200	170	118	153	2091
PSYCHIATRY	18	21	21	18	28	39	23	16	17	13	11	8	233
OBG	154	136	140	129	149	168	139	182	159	139	97	133	1725
DENTAL	0	0	0	0	2	2	1	1	2	3	0	0	11
DERMATOLOGY	1	1	2	1	0	1	0	4	2	1	0	1	14
RESPIRATORY MEDICINE	12	24	19	29	17	23	31	35	29	30	24	12	285

According to Table 2's analysis of OPD to IPD admissions, underscoring its crucial role in inpatient care - General Medicine had the most admissions (5,366) during the study period while Obstetrics & Gynaecology (1,725) and Paediatrics (2,091) came next, both of which demonstrated steady demand all year long. A consistent surgical burden was shown in the 1,409 admissions from general surgery. Despite

seeing fewer OPD patients, neurosurgery admitted 251 patients, which suggests a high conversion rate and seriousness of cases. On the other hand, because the majority of their cases are handled as outpatients, departments like Dermatology (14) and Dental (11) had extremely few admissions.

Table 3: Conversion rate from out-patient department in percentages

Dept / Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cardiology	17.7	18.69	6.08	0	9.9	0.89	0	0	0	0	4.08	1.85	4.94
ENT	1.73	1.97	1.22	1.07	2.24	1.68	1.45	1.16	3.06	1.52	2.54	0.98	1.77
General Medicine	26.5	24.6	23.13	23.44	25.79	20.73	19.98	21.6	20.27	28.62	33.74	33.52	24.08
General Surgery	12.8	12.12	13.59	12.9	11.5	14.4	12.52	16	11.34	15.57	13.87	13.56	13.39
Neuro Surgery	27.5	11.22	8.08	11.45	9.69	13.5	21.53	11.46	11.81	15.64	13.38	0	13.08
Orthopaedics	5.13	4.5	3.88	3.44	4.01	4.62	3.03	16.86	4.04	4.55	4.62	5.36	4.21
Paediatrics	21.72	20.48	19	19.95	20.64	24.58	19.79	18.97	19	24.89	24.43	27.5	21.23
Psychiatry	5.32	5.94	5.21	4.66	5.57	8.7	4.48	3.99	2.86	3.91	3.48	2.42	4.83
Obstetric & Gynaecology	11.57	10.14	9.18	9.5	10.25	11.55	8.51	10.62	10.16	12.34	9.38	13.72	10.43
Dental	0	0	0	0	0.45	0.38	0.17	0.18	0.42	0.73	0	0	0.2
Dermatology	0.16	0.17	0.26	0.12	0	0.09	0	0.37	0.22	0.14	0	0.23	0.14
Respiratory Medicine	5.28	9.48	6.18	10.24	6.61	7.9	10.95	11	9.73	12.44	11.7	5.88	8.88

The above table highlights significant variation in OPD to IPD conversion rates across hospital departments, offering key insights into clinical performance and revenue impact. Among all departments, **General Medicine** consistently recorded the **highest average conversion rate at 24.08%**, with a peak of **33.74% in November**, indicating a strong inpatient demand likely due to chronic illnesses, acute infections, and seasonal diseases. **Paediatrics** followed closely with an average of **21.23%**, showing increased conversions during winter months, reflecting seasonal vulnerability in children. **Neurosurgery**, despite lower outpatient numbers, maintained a high conversion rate of **13.08%**, particularly in January (27.5%) and July (21.53%), underscoring the critical and complex nature of neurosurgical cases, which translates into higher revenue potential per admission.

On the other hand, the departments with the **lowest conversion rates** included **Dermatology (0.14%)**, **Dental (0.20%)**, and **ENT (1.77%)**, reflecting their primarily outpatient-based, non-critical case profiles that rarely require hospitalization. **Cardiology** showed inconsistencies, with several months recording 0% admissions and isolated spikes (e.g., 18.69% in February), suggesting data anomalies or indirect admission patterns.

4. Discussion

In this tertiary-care facility observation study, the overall rate of OPD-to-IPD conversion was 11.2% (12,146 admissions among 107,773 OPD visits), reflecting benchmarks described in other Indian hospitals (Uma & Anupriya, 2023). The departments with the highest rates of conversion were General Medicine (24.1%), Paediatrics (21.2%), and General Surgery (13.4%), highlighting their core functions of assessing and admitting inpatient-needs patients (Uma & Anupriya, 2023). Seasonal peaks especially in November for General Medicine (33.7%) and in paediatric admissions over winter imply conversion rates adjust with fluctuations in disease load, replicating trends seen in paediatric hospital utilizations (Chatterjee et al., 2018). This highlights the need for forward planning to cover demand peaks. The sharp seasonal peaks 33.7% for General Medicine in November and winter peak for Paediatrics reflect global paediatric trends. Hospital admission for illnesses like bronchiolitis, asthma exacerbation, and other respiratory illnesses usually peaks during winter months, necessitating forward capacity planning (Pelletier et al., 2021).

Neurosurgery, with reduced OPD throughput, had a significant conversion rate (13.1%), bearing witness to the

acuity and case complexity handled in this specialty. This trend is consistent with the evidence that high-acuity departments can generate disproportionate contributions towards both clinical outcomes and financial results (Jyani, 2025). On the other hand, Dermatology, Dental, and ENT had very low conversion rates (<2%), reflecting their mainly outpatient-focused care practice (Chatterjee et al., 2018).

Cardiology evidenced inconsistent conversion patterns with some months having zero admissions and sporadic high spikes (e.g., 18.7% in February), which suggests that most admissions are through emergency or referral channels and not through direct OPD routes. This variability indicates the necessity of improved tracking and categorization of the sources of admission. These results have three important implications:

Department-level conversion monitoring, particularly during seasonal highs, can shape staffing, bed assignment, and resource planning.

High-margin, high-acuity specialties such as Surgery and Neurosurgery contribute heavily to hospital profitability, further justifying the importance of combined performance measures considering volume as well as conversion efficiency (Jyani, 2025; Uma & Anupriya, 2023).

Subsequent research should also attend to patient-level OPD-to-IPD conversion drivers, e.g., socio-economic status and patient-reported reasons for decision-making, as proposed by Uma & Anupriya (2023), and to the identification of operational hindrances such as delay in testing or referral systems (Chatterjee et al., 2018). Future studies should also examine patient-level determinants of conversion including socio-economic determinants, patient-reported measures, and logistical limitations as outlined in earlier qualitative studies (Sharma et al., 2025). Lastly, the merging of conversion tracking with fiscal metrics can augment operational effectiveness and hospital governance.

The marriage of conversion information with financial performance and operational measures can augment efficiency and reinforce hospital management structures. Mixing the findings of seasonal patterns and fiscal effect studies puts hospital leaders in the position to maximize patient care as well as institutional viability.

5. Conclusion

This study elucidates the sharp differential in the rates of OPD-to-IPD conversion across hospital departments and concludes its significance as a measure of performance and revenue. Having a gross conversion rate of 11.2%, our findings are highly consistent with the Indian national average of 10–15% in tertiary hospitals. General Medicine, Paediatrics, and General Surgery departments had the largest impact, not just due to the large outpatient volume but also due to having high conversion efficiency. High-acuity specialties such as Neurosurgery further point out that conversion rates alone may underestimate departmental revenue potential because they exhibit a high-impact, low-volume admission profile. Low-risk outpatient-driven specialties Dermatology, Dental, and ENT were consistently

posting conversion rates of below 2%, affirming their negligible role in generating inpatient revenues.

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