

An Observational Study on In-Patient Department (IPD) of Citizen Hospital, Durgapur

A Comprehensive Evaluation of Ward Operations, Bed Management, and Patient Care Delivery

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Abstract : This observational study evaluates the operational workflows, bed utilization metrics, clinical-administrative coordination, and patient safety protocols within the In-Patient Department (IPD) of Citizen Hospital, Durgapur, with a specific focus on the 22-bed Male General Ward (MGW). As the operational and financial core of tertiary healthcare institutions, IPD efficiency directly determines patient satisfaction, turn-around times, and clinical outcomes. Over a one-month observational period, daily morning and evening operational cycles were tracked, including patient census sheets, bed turnover rates, doctor nursing coordination during daily rounds, patient priority triaging (PEPUPI protocol), emergency code activations, and biomedical waste (BMW) segregation routines. The findings indicate that while the hospital maintains exceptional compliance with WHO infection control standards and structured triaging protocols, heavy reliance on manual documentation creates administrative delays during peak discharge hours. Strategic recommendations are proposed to transition toward integrated Electronic Medical Records (EMR) and digital census dashboards to optimize patient throughput and administrative efficiency.

IndexTerms - In-Patient Department, Bed Management, PEPUPI Protocol, Bio-Medical Waste Management, Hospital Administration, Turnaround Time, Citizen Hospital Durgapur.

1. INTRODUCTION

Citizen Hospital, established in 2021, is a premier 188-bedded multi-specialty healthcare facility located at Market Street, Bidhannagar, Durgapur, West Bengal (Pin :- 713212). Positioned strategically just 1 KM from National Highway 2 (NH-2), the hospital provides high-quality, accessible secondary and tertiary medical care to populations across Durgapur, neighboring districts, and adjoining states via robust rail and road connectivity. The institutional infrastructure encompasses a 22-bed Male General Ward, Female General Wards, High Dependency Units (HDU), Intensive Care Units (ICU), Neonatal ICU (NICU), Dialysis Unit, Cath lab, Modular Operation Theatres (OT), and advanced diagnostic wings (CT Scan, USG, Digital X-Ray, Pathology). Supported by a panel of over 49 expert consultants and medical officers, Citizen Hospital has successfully executed over 17,000 surgical procedures across major disciplines including Cardiology, Orthopedics, Gastroenterology, Urology, Neurology, General Surgery, and Pediatrics. The hospital operates under an inclusive care framework designed to serve all socio-economic strata through streamlined cashless hospitalization empanelment's and Swasthya Sathi schemes.

2. NEED OF THE STUDY

Contemporary healthcare management study emphasizes that spatial accessibility and tiered bed-capacity models are foundational to effective regional healthcare delivery. Studies demonstrate that proximity to major transport corridors significantly enhances the arrival times for acute medical emergencies. Furthermore, research highlights Bed Turnaround Time (TAT) as a key operational KPI; prolonged TAT directly causes emergency room congestion and extended outpatient wait times.

Lean healthcare literature advocates for standardized bed-tracking tools, structured clinical rounding, rigid ward-level stock management, and proactive discharge planning to eliminate artificial bed shortages and mitigate healthcare staff burnout.

3. POPULATION AND SAMPLE

The primary objective of this observational study is to analyze the daily operational workflows and administrative dynamics within the 22-bed Male General Ward of Citizen Hospital, Durgapur. Specific sub-objectives include :-

- To evaluate Bed Management efficiency and monitor Bed Turnaround Time (TAT).
- To analyse clinical-administrative coordination during daily consultant rounds.
- To audit ward-level inventory logistics and stock-replenishment routines for consumables.
- To examine frontline patient-liaison strategies and identify bottlenecks in final discharge clearances.

4. RESEARCH METHODOLOGY

This study utilized a descriptive, cross-sectional, observational field design over a 1-month period (November 26, 2025 to December 26, 2025) at Citizen Hospital, Durgapur. Data collection combined passive observation of clinical rounds, nursing handovers, and patient interactions with active tracking of administrative documentation including IPD Case Files, Patient Daily Sheets, Inventory Checklists, and Discharge Clearance Forms. Operational parameters including bed turnover rates and documentation error rates were compiled and analyzed using descriptive statistical tools.

5. RESEARCH GAP & NEED OF THE STUDY

While existing literature focuses heavily on macro-level hospital informatics in large corporate chains, there is a distinct scarcity of ground-level operational studies evaluating localized, high-density general wards in rapidly growing regional hospitals. Because general wards serve as the primary entry point for affordable secondary care, optimizing their micro-logistics is essential for sustaining institutional patient flow and quality of care.

6. RESULTS AND OBSERVATIONS

Observational monitoring of the 22-bed Male General Ward yielded vital empirical data regarding daily patient tracking, emergency management, patient triaging, and infection control protocols.

6.1 Daily Census & Case Mix

Daily tracking via the Male General Ward Patient Daily Sheet revealed a dynamic case mix spanning acute surgical interventions, orthopedic trauma, urological disorders, and chronic systemic illnesses. A representative daily census (as recorded on 28/11/2025) tracking 17 active inpatients is summarized in Table 1 below.

Structured Patient Tracking Data of Male General Ward (MGW) at Citizen Hospital, Durgapur (Census Date :- 28/11/2025)

SL.	UHID	Age/Sex	DOA	OT Date	Diagnosis	Consultant	Category	Progress Notes / Remarks
1	251124003	51Y/M	24/11	22/11	Choledocholithiasis	Dr. A. Rahaman	S/S	ERCP done, vitals stable
2	251127006	42Y/M	27/11	-	Chronic Liver Disease (CLD)	Dr. B. I. Ahmad	S/S	Ascites profile done, USG done
3	251118017	39Y/M	18/11	20/11	Rt Tibia Fibula Fracture	Dr. Kanchan	S/S	Conservative management, stable
4	251118003	58Y/M	18/11	20/11	Lt Upper Vertical Laceration	Dr. R. Ranjan	S/S	Plan Discharge
5	251120013	28Y/M	20/11	-	Rt Tibia Fracture	Dr. N. Bandyopadhyay	S/S	Plan Discharge, Ortho opinion done
6	251116008	23Y/M	16/11	21/11	Deep Cut Injury	Dr. K. P. Anand	S/S	Wound dressing done, stable
7	251127001	27Y/M	27/11	27/11	Acute Appendicitis	Dr. F. A. Ansari	S/S	Post-op monitoring, vitals stable
8	251126005	32Y/M	26/11	-	Rt Maxilla Fracture	Dr. S Mohapatra	S/S	Maxillofacial evaluation done
9	251122008	41Y/M	22/11	-	Lt Pyelonephritis	Dr. R. Ranjan	S/S	IV Antibiotic course ongoing
10	251119014	37Y/M	19/11	-	Hemiplegia	Dr. B. I. Ahmad	S/S	Management plan, Vitals stable
11	251124004	44Y/M	24/11	27/11	Acute Urinary Retention	Dr. R. Ranjan	S/S	USG Abdomen, KFT done
12	251127003	25Y/M	27/11	-	Coronary Artery Disease (CAD)	Dr. A. Rahaman	S/S	ASA done, cardiac monitoring

13	251124010	62Y/M	24/11	-	Chronic Non-healing Ulcer Rt Foot	Dr. K. P. Anand	S/S	Regular dressing, sugar control
14	251121006	30Y/M	21/11	24/11	Lt Hand Injury, Muscle Piece Ex.	Dr. S. Mohapatra	S/S	Post-op wound care
15	251116010	50Y/M	16/11	-	Generalized Weakness	Dr. B. I. Ahmad	S/S	Supportive care, lab investigation
16	251121005	65Y/M	21/11	26/11	Urethral Stricture	Dr. R. Ranjan	S/S	Post-procedural monitoring
17	251125003	64Y/M	25/11	26/11	Benign Prostatic Hyperplasia (BPH)	Dr. R. Ranjan	S/S	Catheter care, vitals stable

6.2 Patient Triaging (PEPUPI Framework)

To optimize care delivery across high-density wards, Citizen Hospital operationalizes a specialized prioritization hierarchy designated as PEPUPI :-

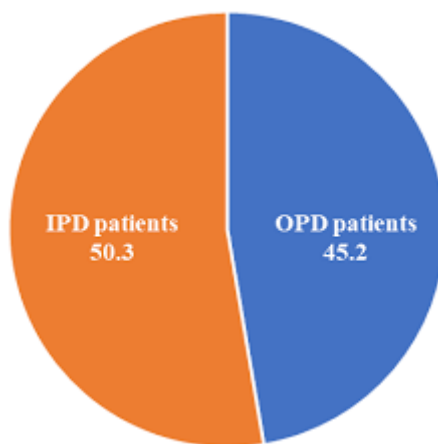
- P – Paediatrics Patients
- E – Elderly Patients
- P – Pregnant Patients
- U – Unconscious Patients
- P – Psychiatric Patients
- I – Intubated Patients

6.3 Bio-Medical Waste (BMW) Management Protocols

Adhering strictly to Bio-Medical Waste Management Rules 2016, waste generated in the ward is segregated at source into four distinct color-coded bins :-

- Yellow Bin (Infectious/Anatomical) :- Human anatomical tissue, placenta, soiled cotton, blood bags, expired drugs, and dressing materials.
- Red Bin (Recyclable Plastics) :- IV tubes, saline bottles, syringes without needles, catheters, urine bags, and gloves.
- White Container (Puncture-Proof Sharps) :- Needles, scalpels, blades, lancets, and fixed-needle syringes.
- Blue Bin (Glassware & Implants) :- Medicine vials, ampoules, broken glass slides, and metallic body implants.

6.4 Patient Distribution Analysis at Citizen Hospitals



Share of IPD & OPD Patients Flow in Citizen Hospital, Durgapur.

1. Overview :- This appendix provides a breakdown of the patient volume distribution at Citizen Hospitals, specifically comparing Inpatient Department (IPD) patients and Outpatient Department (OPD) patients.
2. Data and Distribution :- The data indicates a high volume of admissions and inpatient care relative to outpatient consultations. The percentage distribution is as follows :-

- Inpatient Department (IPD) Patients :- 50.3%
- Outpatient Department (OPD) Patients :- 45.2%

(Note: The remaining 4.5% accounts for emergency or other unclassified patient flows.)

3. Key Findings :-

- Higher IPD Volume :- IPD patients make up the majority of the patient distribution at 50.3%. This is a notable trend, as hospitals typically see significantly higher OPD numbers compared to overnight or long-term admissions.
- Resource Allocation :- The higher influx of IPD patients suggests a heavy demand on critical hospital infrastructure, including bed occupancy, nursing staff, inpatient care units, and long-term medical resources.

7. DISCUSSION AND RECOMMENDATIONS

The empirical observations demonstrate that while Citizen Hospital maintains exceptionally high clinical safety standards, manual record-keeping on paper daily sheets creates unnecessary operational drag. Transcribing patient records manually increases turnaround times for billing clearance and discharge summaries.

7.1 Strategic Recommendations

1. EMR & Digital Census Dashboard Integration :- Transition from handwritten Patient Daily Sheets to an automated, real-time Hospital Information System (HIS) dashboard accessible at nursing stations.
2. Bedside Waste Segregation Units :- Standardize 4-color waste bin clusters directly at each bed bay rather than centralized nursing areas to enforce direct segregation at source.
3. Continuous Refresher Training & Drills :- Conduct monthly simulated drills for Code Blue activation and mandatory WHO 11-step hand hygiene audits for housekeeping and auxiliary nursing staff.
4. Multilingual Visual Aids :- Install visual infographics in Bengali and Hindi detailing patient safety, hygiene moments, and waste disposal for patient attendants.

8. CONCLUSION

This observational study at Citizen Hospital, Durgapur, highlights the critical role of frontline administrative discipline in sustaining inpatient department efficiency. The 22-bed Male General Ward demonstrates effective execution of clinical prioritization (PEPUPI) and strict bio-medical waste segregation. Implementing digitized census tracking and workflow automation will further reduce Bed Turnaround Time (TAT), enhance resource allocation, and optimize overall patient satisfaction.

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REFERENCES

- [1] Citizen Hospital. (2026). Official Infrastructure and Operations Manual. Citizen Hospital, Bidhannagar, Durgapur, West Bengal.
- [2] Ali, A. (2001). Macroeconomic variables as common pervasive risk factors and the empirical content of the Arbitrage Pricing Theory. *Journal of Empirical Finance*, 5(3): 221–240.
- [3] Basu, S. (1997). The Investment Performance of Common Stocks in Relation to Their Price to Earnings Ratio: A Test of the Efficient Markets Hypothesis. *Journal of Finance*, 33(3): 663–682.
- [4] Ministry of Environment, Forest and Climate Change. (2016). Bio-Medical Waste Management Rules, 2016. Government of India.
- [5] World Health Organization. (2020). WHO Guidelines on Hand Hygiene in Health Care. World Health Organization Guidelines Approved by the Guidelines Review Committee, Geneva.
- [6] Global Journal of Medicine and Public Health. (2026). Operational Efficiency in Inpatient Hospital Wards. *GJMEDPH*, 15(2): 45–52.

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