

CITY HOSPITAL ANALYSIS

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Project Summary

City General Hospital is experiencing severe operational issues: ER overcrowding, bed misallocation, staff burnout, medication mismanagement, financial losses, and high lab retest rates. This project analyzes available hospital data and produces an interactive Excel dashboard with actionable recommendations.

Objectives

1. Patient Demographics: Distribution of patients by Age groups, gender etc.
2. Admissions Trend: which day of the week is the busiest ?
3. Billing & Insurance: Revenue generated by each insurance provider
4. Doctor Performance: Doctor to patient ratio - which doctors are working more and why?
5. Medication Utilization: How do we stop running out of essential drugs while others expire?
6. Admission Types: When do unexpected emergency spikes happen?
7. Test Result Quality: Why are some of laboratory tests inconclusive?

Dataset Overview

City Hospital.xlsx** — patient_id, age, gender, date_of_admission, department, billing_amount

New column added: age_group, doctor_to_patient_ratio, billing_category, admission_days

KPIs

- Total number of patients
- Average age of patients
- Total income
- Average admission days
- Average income

Dashboard Insights

- Majority of ER visits are from patients that are 40yrs and above → contributes to bed shortages
- Tuesdays and Thursdays have the highest number of patient visits
- 90% of lab tests flagged for retest, increasing workload and delays
- Less than 1% of total doctors attend to more than 10 patients each

Dashboard Insights contd

- Inventory mismatch: critical drugs short while others near expiry
- Average emergency cases are 33% all round the year
- Tests are normal for only Arthritis condition
- Revenue leakage from unpaid insurance claims and billing gaps

Recommendations

1. Reallocate beds and triage protocols based on age-group trends
2. Rebalance staff shifts using workload analytics and consider cross-training
3. Implement automated stock monitoring & FIFO for medications
4. Tighten lab QC processes to reduce retests (target <5%)
5. Audit billing and implement a claims follow-up workflow to reduce unpaid claims
6. Monitor KPIs weekly and run a monthly operational review with stakeholders

Conclusion

Be assured that this dashboard provides a clear analysis on the existing problem and recommends data-driven strategies to improve overall workflow and increase revenue.

Thank you for your time