REPORT

INTRODUCTION:

Health insurance is a crucial pillar in financing inpatient care, especially in multispecialty hospitals where treatment costs are significant. Understanding how different hospital departments contribute to cashless claims and how insurers finance these claims is essential for effective hospital management. This project focuses on exploring the department-wise distribution of inpatient cashless claims and the insurance payout patterns at Apollo Hospital, Bannerghatta, aiming to support better financial planning and operational efficiency.

OBJECTIVE:

Analysis of Department wise Distribution and Insurance Financing Patterns on IPD Cashless Claims at Apollo Hospital Bannerghatta

Framed key questions:

- What is the distribution of inpatient cashless claim volume across hospital departments?
- What is the average insurance payment per cashless claim for each hospital department?
- How do total cashless claim payout vary across hospital departments for different type of insurance companies?
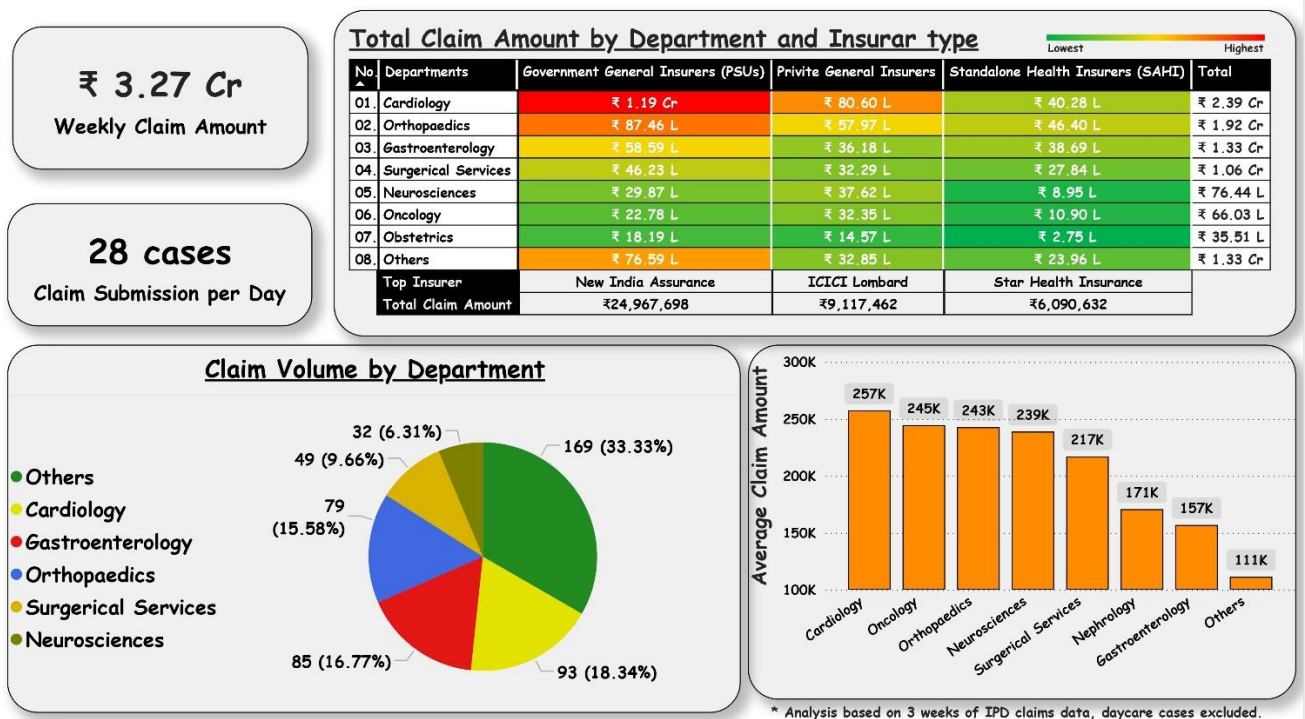
METHODOLOGY:

- **Study Area**: Apollo Hospital, Bannerghatta Road, Bangalore

- **Research Design**: Descriptive analysis

- **Sampling Technique**: Purposive sampling

- **Study Data**: TPAs/insurance company financed IPD credit claims (Excluded daycare cases)

- **Tools Used**: Excel and Power BI

- **Key parameters**: Submission Date, claim amount, insurer name, and Discharge Department name

- **Data Sources**: ClaimBook and physical documents (pre-auth approvals, final bills, and discharge summaries

- **Sample Size and Duration**: 507 cases collected over 3 weeks

DATA SEGMENTATION AND STRUCTURING

- Choose data pool of IPD credit claims financed by TPAs/insurance companies.
- Excluded daycare, OP, and MV (chemo) cases from the dataset.
- Retained claims from Apollo Hospital Bannerghatta only (removed cases of other Apollo units in Bangalore.)
- Grouped department (Gastroenterology included gastroenterology and surgical gastroenterology, Neurosciences included neurology and neurosurgery, oncology included Breast oncology, gynaecological oncology, head and neck oncology, medical oncology, surgical oncology, uro-oncology [MV Chemo case not included], orthopaedics includes orthopaedics and surgical services include colorectal, general, mas and bariatric, vascular and plastic surgery)
- Also grouped insurers into PSUs, SAHI and private general insurers

DATA ANALYSIS AND VISUALIZATION

- Imported processed data into Power BI for visual exploration.
- Created key visuals based on project objectives:
  - Pie chart to show department-wise distribution of cashless claim volume
  - Bar chart comparing average cashless claim amount per department
  - Heat map highlighting total claim amounts financed by each type of insurer across departments

₹ 3.27 Cr
Weekly Claim Amount

28 cases
Claim Submission per Day

Total Claim Amount by Department and Insurar type

Lowest ─────── Highest

No.	Departments	Government General Insurers (PSUs)	Privite General Insurers	Standalone Health Insurers (SAHI)	Total
01.	Cardiology	₹ 1.19 Cr	₹ 80.60 L	₹ 40.28 L	₹ 2.39 Cr
02.	Orthopaedics	₹ 87.46 L	₹ 57.97 L	₹ 46.40 L	₹ 1.92 Cr
03.	Gastroenterology	₹ 58.59 L	₹ 36.18 L	₹ 38.69 L	₹ 1.33 Cr
04.	Surgerical Services	₹ 46.23 L	₹ 32.29 L	₹ 27.84 L	₹ 1.06 Cr
05.	Neurosciences	₹ 29.87 L	₹ 37.62 L	₹ 8.95 L	₹ 76.44 L
06.	Oncology	₹ 22.78 L	₹ 32.35 L	₹ 10.90 L	₹ 66.03 L
07.	Obstetrics	₹ 18.19 L	₹ 14.57 L	₹ 2.75 L	₹ 35.51 L
08.	Others	₹ 76.59 L	₹ 32.85 L	₹ 23.96 L	₹ 1.33 Cr
	Top Insurer	New India Assurance	ICICI Lombard	Star Health Insurance	
	Total Claim Amount	₹24,967,698	₹9,117,462	₹6,090,632	

Claim Volume by Department

- Others: 169 (33.33%)
- Cardiology: 93 (18.34%)
- Gastroenterology: 85 (16.77%)
- Orthopaedics: 79 (15.58%)
- Surgerical Services: 49 (9.66%)
- Neurosciences: 32 (6.31%)

Average Claim Amount

Department	Amount
Cardiology	257K
Oncology	245K
Orthopaedics	243K
Neurosciences	239K
Surgerical Services	217K
Nephrology	171K
Gastroenterology	157K
Others	111K

* Analysis based on 3 weeks of IPD claims data, daycare cases excluded.

INTERPRETATION OF VISUALS:

1. Pie Chart: Claim Volume by Department

- **Observation**:
    - Cardiology accounts for the highest volume of inpatient cashless claims (18.34%).
    - Followed by Gastroenterology (16.77%), Orthopaedics (15.58%), and Surgical Services (9.66%).
    - Remaining claims are distributed among Neurosciences, Oncology, Obstetrics, and Others.
- **Interpretation**:
    - Cardiology has the highest IPD load in terms of insurance-financed admissions. This may be due to the high incidence of cardiac cases and the need for costly interventions such as stents, angioplasty, or bypass.
    - A significant volume in Gastroenterology and Orthopaedics indicates active use of insurance across lifestyle and trauma-related conditions.

2. Bar Chart: Average Cashless Claim Amount per Department

- **Observation**:
    - Highest average claim:
        - **Cardiology (₹257K)**
        - Followed by Oncology (₹245K), Orthopaedics (₹243K) and Neurosciences (₹239K).
    - Lowest average claim: Others (₹111K).
- **Interpretation**:
    - Cardiology cases not only occur in large volumes but are also resource-intensive.
    - High claim amounts likely reflect complex procedures and extended hospital stays.
    - "Others" indicates a basket of departments with minor or varied specialties, leading to lower cost and shorter stay claims.

3. Heat Map: Total Claim Amount by Department and Insurer Type

- **Observation**:
    - Cardiology again leads with ₹2.39 Cr, with **Government PSUs** contributing the most (₹1.19 Cr).
    - Orthopaedics also sees high payout across all insurer types (₹1.92 Cr).
    - Gastroenterology and Surgical Services follow in terms of total payout.
    - Star Health, ICICI Lombard, and New India Assurance were the top insurers by contribution for each insurer type.
- **Interpretation**:
    - Government General Insurers (PSUs) remain major players in high-claim specialties like Cardiology.

- Private and SAHI insurers also contribute substantially in Orthopaedics and Gastroenterology, indicating strong B2B presence.
- Neurosciences and Oncology show insurer diversity, which may be leveraged in policy negotiations.

ACTIONABLE INSIGHTS AND RECOMMENDATIONS:

Cardiology (Highest Volume & Highest Average Claim)

- **Recommendation**:
    - Deploy additional billing and insurance processing staff in this department to reduce claim processing delays.
    - Negotiate better package deals with top insurers (esp. New India Assurance) due to high volume and payout.
    - Introduce automation tools for pre-authorization in cardiology to improve TAT.

Orthopaedics (High Volume + High Average Claim)

- **Recommendation**:
    - Consider department-specific SOPs for documentation and pre-authorization to prevent delays or rejections.
    - Align orthopedic packages with top claim items (implants, post-op care) and discuss them with SAHI and private insurers.
    - Strengthen communication between billing and surgery schedulers in Ortho to predict claim volume surges.

Gastroenterology (High Volume)

- **Recommendation**:
    - Deploy dedicated claim coordinators in Gastro to manage the high volume efficiently and reduce processing delays.
    - Implement streamlined pre-auth templates for frequent procedures to accelerate approvals and reduce manual errors
    - Set up insurer-wise claim tracking dashboards to identify patterns in rejections or delays and take proactive action.

Oncology & Neurosciences (High Average Claim Amount)

- **Recommendation**:
    - Investigate and document reasons for higher average claims—complex cases, extended stays, or specialty drugs.

- o Use this data to lobby for higher ceilings or sub-limits in corporate insurance tie-ups.
- o Explore bundled payments or value-based packages.

Heat Map Insight: Insurer-Specific Patterns

- **Recommendation**:
  - o Assign relationship managers per insurer type (PSUs, Private, SAHI) to streamline coordination.
  - o Create dashboards for claim trends by insurer type to anticipate processing timelines and payout behaviour.
  - o Identify insurers with consistent low payouts and review their rejection or deduction patterns for future strategy.

Overall Operational Recommendations

- Train billing teams on department-wise average claim benchmarks to detect anomalies early.
- Use insights to optimize claim turnaround time (TAT) by creating fast-track paths for high-volume departments.
- Build insurer-specific claim protocols based on frequent observations (e.g., New India vs. Star Health forms and timelines).
- Deploy a hospital-wide tracker for submission date vs. payout duration to identify bottlenecks.

CONCLUSION:

This project successfully analysed the department-wise distribution and insurance financing patterns of inpatient cashless claims at Apollo Hospital, Bannerghatta. By examining 507 cases over a 3-week period using data from ClaimBook and physical records, key trends were identified across departments and insurer types. The findings revealed that Cardiology accounted for the highest claim volume and average claim amount, highlighting its critical role in hospital operations and insurance revenue. Orthopaedics, Gastroenterology, and Surgical Services also showed significant activity, both in terms of volume and financial payout.

The analysis further highlighted how different types of insurers—Public Sector Units (PSUs), Private General Insurers, and Standalone Health Insurers (SAHIs)—contribute variably across departments, influencing claim management and processing strategies. The insights enabled the identification of high-impact areas where operational improvements and insurer engagement could be prioritized.

Ultimately, the study provides actionable inputs for hospital management to streamline insurance claim processing, optimize resource allocation, and strengthen insurer relationships—thus improving financial efficiency and patient experience in cashless claim handling.