

# Healthcare Claims Analysis Report

Generated on: 2025-05-25 11:09:24

Model Trained on: 2025-05-25

## Group Analysis Scope:

Employers: Tech Innovators Ltd

Departments: General

Benefit Categories: Gold, Silver, Platinum

## Executive Summary

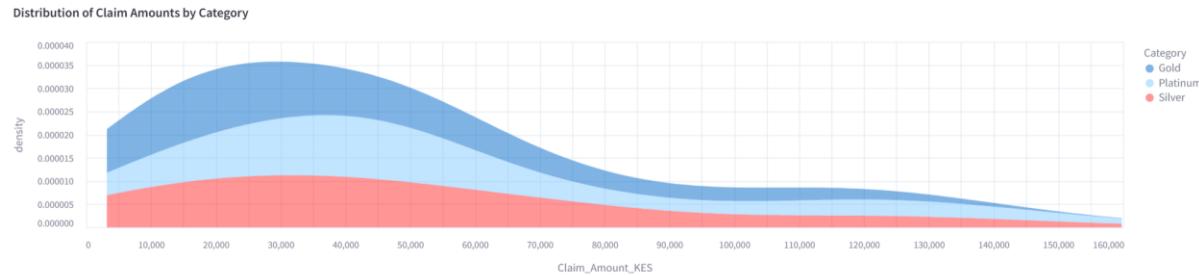
Time Period	Total Claims	Unique Members	Total Claim Amount	Average Claim	Model R <sup>2</sup>
2024-01-04 to 2024-12-30	200	200	KES 9,805,951.00	KES 49,029.75	0.999

### Key Insights

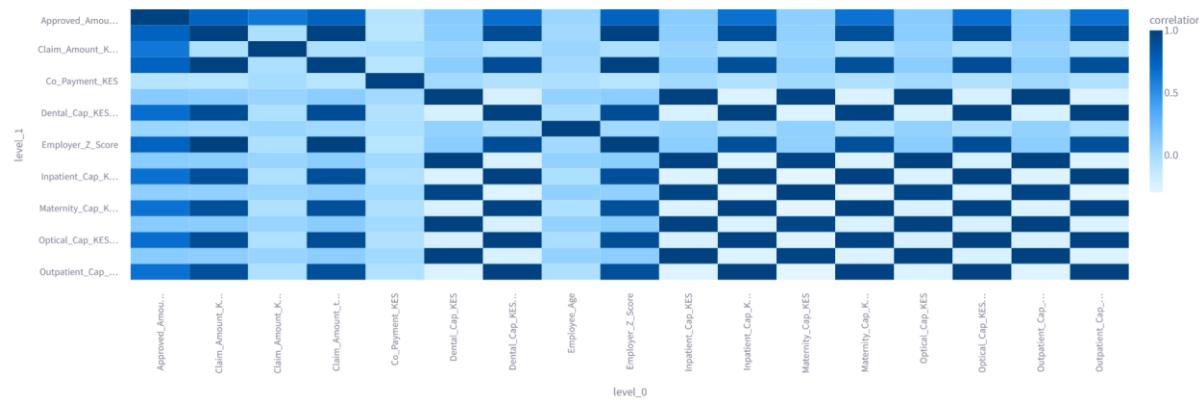
- 1 providers show above-average costs relative to patient age: Coptic Hospital
- Potential fraud detected in 2 claims (1.0% of total)

## Advanced Analysis

### 1.1 Claim Amount Distribution by Category

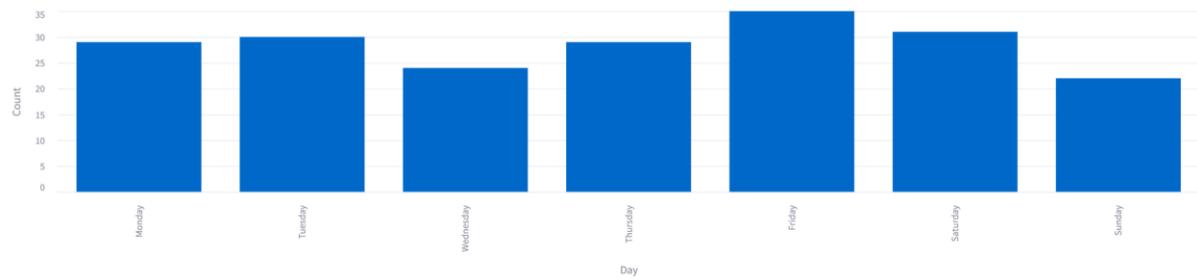


### Interactive Correlation Matrix



## 1.2 Temporal Analysis

Claims by Day of Week



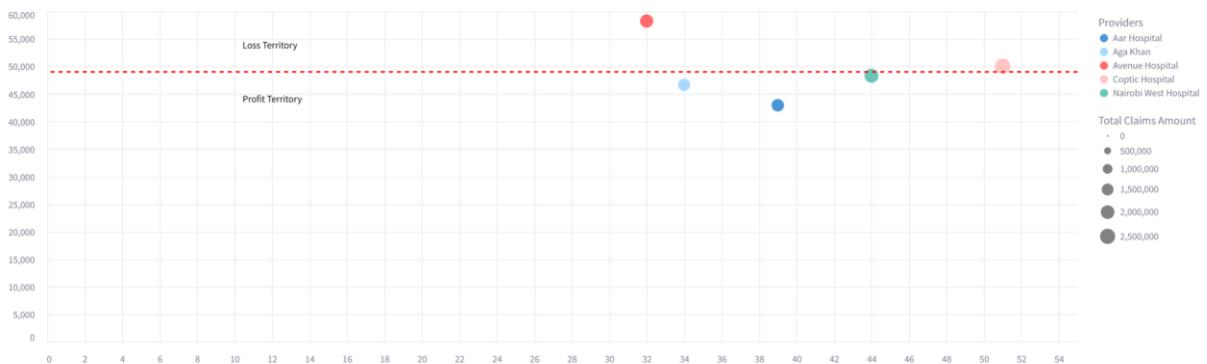
Monthly Trends with Confidence Intervals



## 1.3 Provider Analysis

Provider Cost Efficiency Analysis

Provider Cost Efficiency Analysis (Break-even at KES 49,029.75 - average claim amount)



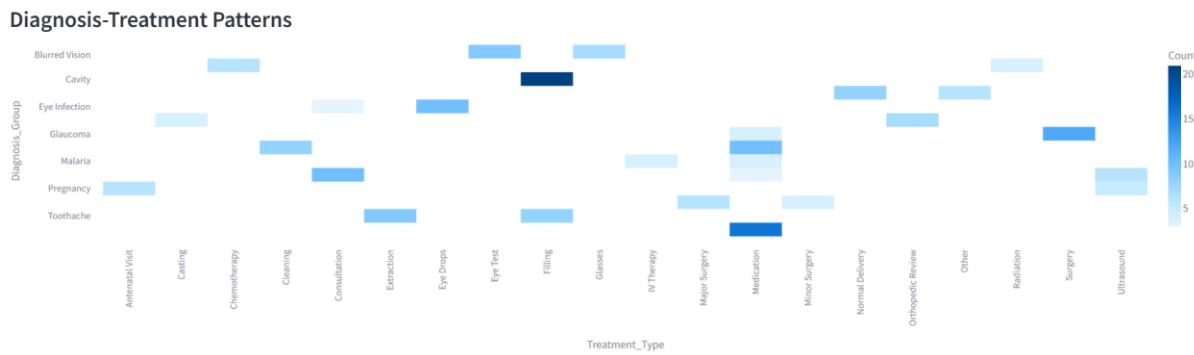
How to interpret this chart:

- Each bubble represents a healthcare provider
- X-axis shows the number of claims from each provider
- Y-axis shows the average claim amount
- Bubble size represents total claims amount
- The red dashed line shows the break-even point (KES 49,029.75)
  - Providers below the line are in **profit territory**
  - Providers above the line are in **loss territory**
- Break-even source: average claim amount
- Hover over bubbles to see detailed provider metrics

Provider Performance Summary

	Provider	Avg_Claim	Claim_Count	Performance
2	Avenue Hospital	KES 58,275.06	32	⚠ Loss
3	Coptic Hospital	KES 50,042.80	51	⚠ Loss
4	Nairobi West Hospital	KES 48,334.64	44	✅ Profit
1	Aga Khan	KES 46,667.91	34	✅ Profit
0	Aar Hospital	KES 42,962.38	39	✅ Profit

## 1.3 Diagnostic Patterns



## Claim Prediction

Prediction Type

Individual Claim  Group Claims

**Group Claims Prediction**

Upload employee group data (CSV or Excel) [\(?\)](#)

Drag and drop file here  
Limit 200MB per file • CSV, XLSX [Browse files](#)

Use existing cleaned data with filters

**Filter Existing Data**

Employers: Tech Innovators ... [x](#) Departments: General [x](#) Benefit Categories: Gold [x](#), Silver [x](#), Platinum [x](#)

Filtered to 200 records

[Predict Filtered Group Claims](#)

Group predictions completed!

Total Predicted Claims: KES 9,805,287.04 Average Claim: KES 49,026.44 High Risk Claims: 27

⚠ Potential fraud detected in 2 claims totaling KES 286,477.66

## Impact Analysis

Analysis Type

Individual Analysis  Group Analysis

**Group Selection**

Select Employers: Tech Innovators ... [x](#) Select Departments: General [x](#) Filter by Current Category: Gold [x](#), Silver [x](#), Platinum [x](#)

[Analyze Group Category Impact](#)

**Group Benefit Category Impact Analysis**

**Current Category Distribution**

Category	Percentage
Gold	~0.35
Platinum	~0.32
Silver	~0.30

## Group Benefit Category Impact Analysis

Highest Average Claim

**KES 49,037.51**

↑ Silver

Lowest Total Cost

**KES 9,798,313.67**

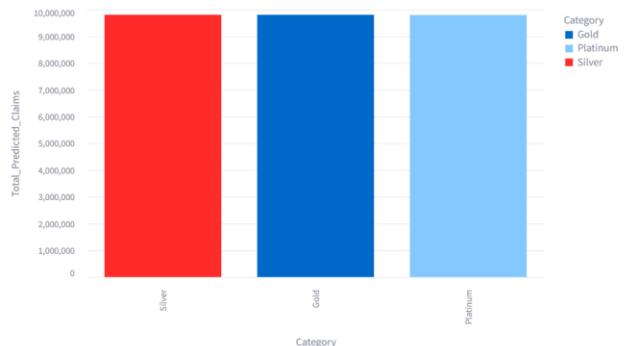
↑ Platinum

Best Fraud Prevention

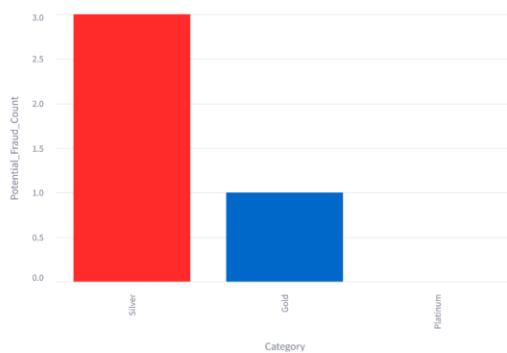
**0 cases**

↑ Platinum

### Total Predicted Claims by Benefit Category



### Potential Fraud Cases by Benefit Category



## Detailed Comparison

Category	Avg_Predicted_Claim	Total_Predicted_Claims	Potential_Fraud_Count	Potential_Fraud_Amount	Inpatient_Cap	Outpatient_Cap	Optical_Cap	Dental_Cap	Maternity_Cap
Silver	KES 49,037.51	KES 9,807,501.84	3	446,183.045	750,000	75,000	40,000	40,000	50,000
Gold	KES 49,034.36	KES 9,806,872.88	1	159,719.3732	1,000,000	100,000	50,000	50,000	75,000
Platinum	KES 48,991.57	KES 9,798,313.67	0	0	1,500,000	150,000	75,000	75,000	100,000

## Potential Cost Savings

Changing from Silver to Gold could save KES 628.96 annually

Changing from Silver to Platinum could save KES 9,188.17 annually

## Actionable Recommendations

1. Consider renegotiating contracts with high-cost providers: Avenue Hospital. Potential savings up to 288,592.09 KES annually
2. Implement enhanced fraud detection measures focusing on: duplicate claims, unusually high-cost procedures, and providers with abnormal billing patterns
3. Review benefit design to align with actual utilization patterns
4. Implement member education programs for high-utilization members
5. Conduct provider performance reviews quarterly
6. Evaluate network adequacy based on geographic distribution of claims

## Appendices

### Model Details

Metric	Value
MAE	588.823
RMSE	1084.535
R2	0.999

### Top 10 Features

		Feature	Importance
8	Claim_Amount_to_Mean		0.642559
10	Employer_Z_Score		0.357239
73	Claim_Month_January		0.000059
90	Claim_Size_Medium		0.000038
6	Dental_Cap_KES_Utilization		0.000021
89	Claim_Size_Large		0.000017
91	Claim_Size_Small		0.000017
3	Inpatient_Cap_KES_Utilization		0.000015
5	Optical_Cap_KES_Utilization		0.000010
58	Hospital_County_Mombasa		0.000007