Company Background

Benjamin & Joseph (B&J) specialises in accurate and comprehensive medical bill auditing for healthcare providers and insurance companies. With advanced technology and industry expertise, the firm delivers tailored services to optimise financial performance and ensure regulatory compliance.

Team Members

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Problem Statement

B&J has abundant data but lacks a defined strategy for deriving valuable insights. There is a need for a **systematic approach to analysing pricing trends.**

Objective

Develop a **price visualisation model** to empower **medical bill auditors** in the auditing process and facilitate informed decision-making

Our Approach

① **Data Exploration**
Meetings with client to understand company systems and auditing process, grasp data collection methods, set focus areas and formulate hypotheses

② **Data Cleaning**
Clean the data with Python by extracting relevant data, dropping blank entries, correcting discrepancies and standardising data structure

③ **Data Visualisation**
Utilise Tableau to create a set of dashboards, enabling insights from a high level overview to granular details

Data Cleaning

Master Audit File

Original Data:
The data consisted of 997 sheets, each representing a Clinical Expense. Each sheet ranged from 14 to 25 columns, with inconsistent column headers.

Cleaned Data:
We extracted 10 key columns and combined the data into a single data frame comprising 44,112 rows of data.
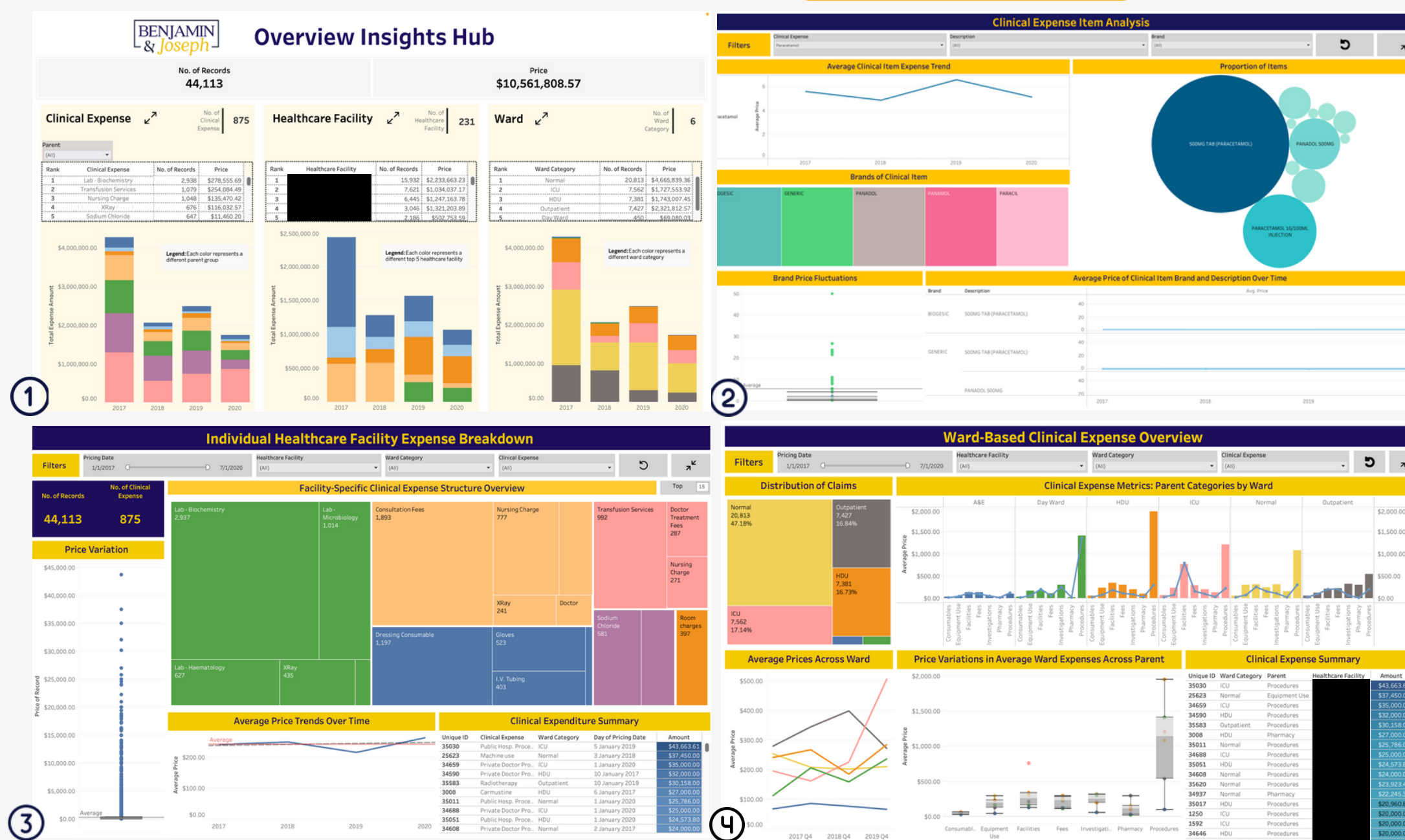
Moving Forward

Improve data entry

B&J could consider aligning their data entry process with our cleaned data structure and implement standardisation practices for improved accuracy of data

Our Learning

Client-Focused Approach

Prioritising business needs and maintaining regular client communication are vital for delivering valuable products

Visualisation Model

① Overview Insights Hub

② Clinical Expense Item Analysis

③ Individual Healthcare Facility Expense Breakdown

④ Ward-Based Clinical Expense Overview

Overview Insights Hub

Comprehensive snapshot to grasp the **scale, scope and trends of medical expenses.** It organises data into key categories such as clinical expense, healthcare facilities and ward.

Clinical Expense

Scrutinise specific clinical items, providing insights into **pricing trends, brand comparisons, and variations in drug forms**

Healthcare Facility

Explore **pricing dynamics** at specific healthcare facilities and compare **trends across the entire network**. Interactive features to **identify outliers** and ensure fair pricing practices.

Ward

Offers insights into **claim distribution, average price trends across wards** and **price variations within parent categories**

Disclaimer: All visuals and charts presented are hypothetical and based on proxy data.