Hospital Data Analysis Project Documentation

Overview:

This Hospital Data Analysis project aims to comprehensively examine the patient waiting list dynamics from 2018 to 2021. Focused on inpatient and outpatient categories, it delves into monthly trends, specialty-wise profiles, and age demographics, utilizing key metrics to derive insights for strategic decision-making.

Problem Statements:

The challenge lies in managing and optimizing the patient waiting list effectively. With the current wait list reaching 709K, understanding the average distribution across outpatient, day case, and inpatient categories is crucial.

Specialty-wise analysis reveals notable variations, requiring attention to areas such as Accident & Emergency and Dermatology. Furthermore, addressing the peaks in wait lists during specific months, notably April and May, is imperative, along with adapting to the escalating trend in outpatient wait lists.

Requirements:

➤ **Metrics required:**
   1. Average & Median Waiting List
   2. Current Total Wait List

➤ **View Required:**
   1. Summary Page
   2. Detailed page for Granular Analysis

Project Goal:

Systematically track and update the current status of patient waiting lists.

Analyse historical trends from 2018 to 2021, emphasizing inpatient and outpatient dynamics.

Conduct a detailed specialty-level and age-profile analysis to identify key areas for improvement.

implement a user-friendly interface with a summary page and detailed sections for granular analysis to facilitate informed decision-making.

Steps in Project:

- Requirement Gathering
- Raw Data Overview
- Connecting Data with Power BI
- Data Cleaning
- Data Processing
- Data Modelling
- Data Visualization/ Dashboard Building
- Insights

Insights:

➢ **Current Patient Wait List Trends:**
  - Latest Month Wait List: 709K, indicating a significant demand for healthcare services.
  - Compared to the same month last year, there's a notable increase from 640K, signifying a growing need for attention.

➢ **Distribution of Wait List by Case Type:**
  - Outpatient cases constitute the majority at 72.49%, followed by Day Case and Inpatient at 16.89% each.
  - Understanding these percentages is vital for resource allocation and managing different case types effectively.

➤ **Top 5 Specialties with Highest Average Wait List:**
  • Noteworthy specialties include Dermatology (167.89), Pain Relief (147.55), and Accident & Emergency (111.19).
  • Addressing these high-impact areas can enhance service delivery and reduce patient waiting times.

➤ **Analysis of Wait List by Time Bands and Age Profile:**
  • The most critical areas demanding attention are cases with an average wait list exceeding 18+ months.
  • Focusing on age groups between 16 to 64 is crucial, with an average wait list of 136.32, impacting a total of 415 cases.

➤ **Monthly Trends in Day Case, Inpatient, and Outpatient:**
  • Inpatient wait lists surge notably in April and May, signalling potential resource bottlenecks during these months.
  • Outpatient wait lists show a consistent monthly increase, highlighting a sustained demand for outpatient services that requires strategic planning.

These insights provide a comprehensive overview for stakeholders, enabling informed decision-making and strategic interventions to enhance patient care and optimize resource utilization.

Conclusion:

1. The project identifies a substantial increase in the overall patient wait list, emphasizing the urgent need for resource allocation and strategic planning.

2. Specialties such as Dermatology, Pain Relief, and Accident & Emergency stand out with higher-than-average wait lists, requiring targeted interventions for improved service delivery.

3. Attention to the age group between 16 to 64 and cases with an extended wait period of 18+ months is essential to address specific demographic and temporal challenges.

4. Monthly trends reveal potential bottlenecks in inpatient services during April and May, while the consistent rise in outpatient demand underscores the importance of adaptive healthcare strategies.