PROJECT OVERVIEW

This project contains 10,000 Life Spring’s hospital record. The goal is to understand the factors that affect patient care quality. Identify areas where care can be improved using data insights. Propose simple, actionable solutions to enhance patient care.

DATA SOURCE

The dataset used in this project was provided by Life Spring hospital.

TOOLS

1. EXCEL: The dataset was gotten as a CSV, so I used Excel to open it. Go through the dataset to know the information it contains as well as cleaning.
2. SQL: The dataset was loaded to SQL for cleaning and querying.
3. Power BI: This tool was used for visualization.

DATA CLEANING

1. Confirming the total normal of dataset and columns.
2. Making sure they all represent their various data type.
3. Checking for duplicates and null values.

EXPLORATORY DATA ANALYSIS

Understand key variables and their relationships. Analyze Patient Care: Look for patterns, such as satisfaction scores by diagnosis, or follow-up care.

INSIGHTS

1. Average length of stay is 16 days.
2. There is a predominance of male patients over female patients, with 5019 males and 4981 females.
3. The patient distribution for Primary Diagnosis is as follows: Injuries (2038), Respiratory problems (2017), Cardiac issues (2001), Diabetes (1993), and Infections (1951).
4. The patient distribution for Age group is as follows: Elderly (3510), Middle Aged (2777), Adult (2725), Youth (988).
5. Patients were discharged to: Rehabilitation center (3387 patients), Nursing facility (3330 patients), and Home (3283 patients).
6. Patients WITHOUT follow-up appointment (5095), and this may impact recovery and readmission rate. Patients WITH follow-up appointment (4905).
7. Elderly patients are the most affected across all Primary Diagnosis.
8. Patients that adhered to medication are 4995, while non-adherers are 5005 (nearly half of the patients).
9. Patient Review summary: Excellent (4044), Poor (4001), Satisfactory (1955).
10. Patient Satisfaction Grades by Primary Diagnosis:
    1. Cardiac Issues:
       1. Poor: 819
       2. Excellent: 775
       3. Satisfactory: 407
    2. Diabetes:
       1. Poor: 747
       2. Excellent: 833
       3. Satisfactory: 413
    3. Infections:
       1. Poor: 780
       2. Excellent: 808
       3. Satisfactory: 363
    4. Injuries:
       1. Poor: 824
       2. Excellent: 835
       3. Satisfactory: 379
    5. Respiratory Problems:
       1. Poor: 831
       2. Excellent: 793
       3. Satisfactory: 393

Patients with diabetes reported the highest excellent satisfaction rate (833), while those with respiratory problems reported the highest poor satisfaction rate (831).

RECOMMENDATION

1. Reduce Length of Stay: Optimize care pathways for earlier discharge.
2. Improve Follow-up Rates: Implement a better scheduling system and patient reminders to ensure follow-up care.
3. Enhance Respiratory Care: Since respiratory patients have the highest poor satisfaction rates, assess treatment plans and improve patient education on condition management.
4. Personalized Care for Elderly Patients: Given their high numbers and likely complex needs, invest in specialized geriatric care programs.
5. Optimize Discharge Planning: Ensure patients discharged to rehab and nursing homes receive structured transition plans to prevent readmissions.
6. Monitor and Improve Patient Experience: Address key areas of dissatisfaction through staff training, better communication, and real-time patient feedback mechanisms.
7. Patient Education & Counseling: Educate patients on the importance of medication adherence, potential side effects, and long-term benefits.
8. Provide easy-to-understand medication guides, especially for elderly patients.
9. Address Financial Barriers: Assess if cost is a barrier and offer information on generic alternatives, insurance coverage, etc.
10. Collect feedback from non-medication adherence patients to understand specific reasons for non-compliance and tailor interventions accordingly.