**Project Overview**

This project analyzes synthetic health data (Synthea dataset) using Tableau to explore psychiatric diagnoses, treatment patterns, and symptom severity. The dashboard provides insights into patient demographics, mental health conditions, and treatment adherence.

**Dashboard Visualizations**

The dashboard includes the following visualizations:

**Age Group Distribution**

Categorizes patients into age groups: 0–10, 11–18, 19–64, and 65+ years.

**Psychiatric Diagnoses**

Displays the count of patients diagnosed with conditions such as depression, anxiety, bipolar disorder, and schizophrenia.

**PHQ-9 Scores (Proxy)**

Highlights patients with symptom severity scores greater than 7, grouped by diagnosis (used as a proxy for PHQ-9).

**Depression Treatment Analysis**

Identifies patients

diagnosed with depression who did not receive antidepressant treatment within 90 days.

**Tools and Technologies Used**

**Data Visualization Tool:** Tableau

**Dataset:** Synthea synthetic health dataset (CSV format)

Data Preprocessing and Assumptions

**Age Group Categorization:** Patients were grouped into predefined age ranges for demographic analysis.

**Symptom Severity Proxy:** Used "Symptom Severity (1-10)" as a proxy for PHQ-9 scores, identifying those with scores above 7.

**Treatment Gap Analysis:** Patients who did not receive antidepressants within 90 days were flagged for analysis.

**Insights and Findings**

**Age Distribution**: The majority of patients fall within the 19–64 age range, with fewer patients in the 65+ category.

**Psychiatric Diagnoses**: Major depressive disorder is the most frequently diagnosed condition.

**Symptom Severity:** A notable portion of patients show high symptom severity, particularly those with depression.

**Treatment Gaps:** Some patients diagnosed with depression did not receive timely antidepressant treatment.

Open the workbook in Tableau Desktop to explore the interactive visualizations.

I have used below mentioned codes on tableau to create the necessary calculated fields.

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The below is the screenshot for **Age Group Distribution**:

* Visualize the number of patients categorized into these age groups:
  + 0–10 years
  + 11–18 years
  + 19–64 years
  + 65+ years

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The below is the screenshot for **Psychiatric Diagnoses**:

* Show the count or proportion of patients with psychiatric diagnoses, such as depression, anxiety, schizophrenia, or a history of these illnesses.

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The below is the screenshot for **PHQ-9 Scores**:

Display patients with a **PHQ-9 score greater than 10 and by diagnosis**.

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The below is the screenshot for **depression Treatment Analysis**:

* Identify patients diagnosed with depression who did not receive antidepressant treatment within the first 90 days of diagnosis.

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