Project : Healthcare - Persistency of a drug

Week 7 Deliverable

Batch: LISUM38

Team: Salus AI Data Avengers				
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Problem description:

ABC Pharma Company faces a persistent challenge in understanding patient adherence to prescribed medications, commonly referred to as drug persistency. This concept involves tracking whether patients continue taking their prescribed medications as recommended by their healthcare providers over a specific timeframe. Drug persistency is critical for assessing treatment efficacy and ensuring positive health outcomes.

Currently, ABC Pharma relies on manual processes to monitor and evaluate drug persistency. These processes are resource-intensive, prone to human error, and do not provide actionable insights in real-time. Consequently, these inefficiencies limit the company's ability to identify adherence barriers, design targeted interventions, and optimize patient care strategies.

To address this, ABC Pharma has partnered with an analytics company to develop an automated, data-driven solution capable of accurately classifying patient drug persistency. The project's objective is to create a machine learning model that evaluates various patient-related factors, identifies patterns impacting persistency, and provides actionable insights to support informed decision-making.

Business Understanding:

By automating the identification of drug persistency, ABC Pharma aims to achieve several key objectives:

1. **Assess Medication Adherence**: ABC Pharma seeks to understand how well patients are following their prescribed drug regimens. This will help the company evaluate the effectiveness of their medications and identify any barriers or challenges that patients might face in maintaining consistent drug usage.
2. **Identify Patterns and Trends:** By analysing drug persistency data across different patient demographics, regions, and disease conditions, ABC Pharma will uncover valuable trends.

This will allow them to target specific patient groups with tailored interventions such as marketing campaigns or educational initiatives aimed at improving medication adherence.

3. **Proactive Intervention:** With an automated system in place, ABC Pharma will be able to intervene proactively when signs of non-adherence are detected. For example, they could send targeted reminders, educational content, or offer support programs to encourage patients to stay on their prescribed therapies.

Ultimately, ABC Pharma's goal is to leverage analytics to enhance the understanding of drug persistency, improve patient adherence, and optimize the effectiveness and impact of their pharmaceutical products. This will lead to better patient outcomes, a more efficient medication management process, and potentially greater market success.

Project Lifecycle and Timeline for Healthcare Persistency Project:

Tasks	Week 7	Week 8	Week 9	Week 10	Week11	Week 12	Week 13
	19-Nov	26-Nov	02-Dec	09-Dec	16-Dec	23-Dec	30-Dec
Business Understanding	✅						
Data Understanding	✅	✅					
Exploratory Data Analysis (EDA)		✅	✅				
Data Cleaning and Preparation			✅	✅			
Model Development				✅	✅		
Model Selection				✅			
Model Evaluation & Performance Reporting					✅		
Model Deployment						✅	
Converting ML Metrics to Business Metrics						✅	
Final Reporting & Presentation for Non-Technical Stakeholders							✅

Data Intake report:

Name: Healthcare – Persistency of a drug

Report date: 19 Nov 2024

Internship Batch: LISUM38

Version: 1.0

Data intake by: Amrin Shaikh

Data intake reviewer: Data Glacier

Data storage location: : https://github.com/ShaikhAmrin02/Data-Glacier-Internship_project/blob/main/Week%207/Healthcare_dataset.xlsx

Tabular data details:

Total number of observations	3424
Total number of files	1
Total number of features	69
Base format of the file	.xlsx
Size of the data	898 KB

Proposed Approach:

- There are no missing values in the dataset.
- There are no duplicate values in the dataset.

GitHub Repo Link:

https://github.com/ShaikhAmrin02/Data-Glacier-Internship_project/tree/main