Team Member Details

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Problem Statement

Drug persistency may be defined as the extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen. One of the challenges for all pharmaceutical companies is to understand the persistency of a drug as per the physician's prescription. To solve this problem, ABC Pharma Company would like us to automate this process of identification. With an objective to gather insights on the factors that are impacting the persistency, we will build a classification for the given dataset which contains patient demographics, provider attributes, clinical factors, and disease/treatment factors as well as the target variable indicating whether the patient was persistent or not in their medication usage.

Business Understanding

There are many current medical research papers highlighting the importance of medication adherence in the healthcare industry [1] [2] [3]. These papers often cite the role of persistence as a key indicator in medication adherence-related quality and performance. Thus, it is essential to accurately classify patients who are less likely to adhere to their prescription in order to better tailor their quality of care. As a result, we may improve medication persistence, health outcomes and healthcare efficiency worldwide.

Project Life Cycle

- Problem Understanding
- Data Understanding
- Data Cleaning and Feature Engineering
- Model Development
- Model Selection
- Model Evaluation
- Report the accuracy, precision and recall of both classes of target variable

- Report ROC-AUC curve
- Model Deployment
- Explain choice and model challenges
- Final project due December 30th, 2022

References

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2. Torre C, Guerreiro J, Longo P, Raposo JF, Leufkens H, Martins AP. Effect of different methods for estimating persistence and adherence to new glucose-lowering drugs: results of an observational, inception cohort study in Portugal. Patient Prefer Adherence. 2018 Aug 17;12:1471-1482. doi: 10.2147/PPA.S170134. PMID: 30147305; PMCID: PMC6103301.
3. Balaban, N.Q., Helaine, S., Lewis, K. et al. Definitions and guidelines for research on antibiotic persistence. Nat Rev Microbiol 17, 441–448 (2019). https://doi.org/10.1038/s41579-019-0196-3