Capstone 2 Project Proposal

Problem Statement

The United States is currently undergoing a drug shortage, causing delays and discontinuations of treatment [1]. The U.S. healthcare system is experiencing a strain on resources due to an aging population, and increased drug usage correlates with age [2, 3]. A model to predict drug demand based on population can forecast demand for future generations to mitigate supply chain bottlenecks.

Criteria for Success

Model to be built by May 1, 2025.

Scope of Solution Space

Model will be based on the population of the United States.

Constraints

Model predicts drug demand based off population statistics without consideration of external factors related to drug production, such as physical capacity of manufacturing plants and economic viability.
Data may be limited to previous years (ex., 2022) due to public availability.

Stakeholders

Joe Xiao, Mentor

Data Sources

Prescriptions dispensed 2009-2022
https://datasetsearch.research.google.com/search?src=0&query=prescription%20data&docid=L2cvMTFwd2JjdjlmYw%3D%3D
Prescription usage with age
https://www.statista.com/statistics/184442/us-population-with-usage-of-prescription-drugs-by-age/
Population data
https://www.statista.com/statistics/241488/population-of-the-us-by-sex-and-age/
Current drug shortages
https://www.ashp.org/drug-shortages/current-shortages/drug-shortages-list?page=All
Resolved shortages

https://www.ashp.org/drug-shortages/current-shortages/drug-shortages-list?page=ResolvedShortages

References

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1. https://www.ama-assn.org/delivering-care/public-health/drug-shortages#
2. https://www.statista.com/statistics/184442/us-population-with-usage-of-prescription-drugs-by-age/
3. https://www.census.gov/library/stories/2023/05/2020-census-united-states-older-population-grew.html