PeopleRX: Drug Recommendation System

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Metis

Client

- Reputable pharmacy brand
- Expanding online healthcare services
- Increasing consumer engagement online

Motivation

Fast and efficient medical treatment without:

1. Unpredictable painful side effects
2. Long clinical trial wait time
3. Uncertainty
4. Human error
5. Costs

Data

212,850 data points with at least 6 features

A	drugName	B	condition	C	review	D	rating	date	E	usefulCount	G
206461	Valsartan		Left Ventricular Dysfunction		"It has no side effect, I take it in combinati▶		9	May 20, 2012		27	
95260	Guanfacine		ADHD		"My son is halfway through his fourth week. We have tried many different medications		8	April 27, 2010		192	
92703	Lybrel		Birth Control		"I used to take another oral contraceptive, The positive side is that I didn't have		5	December 14, 2009		17	
138000	Ortho Evra		Birth Control		"This is my first time using any form of bir▶		8	November 3, 2015		10	

Project Design

1 Clean Data + Explanatory Data Analysis (EDA)

2 Creating Top Drugs Dataset in SQL using RANK(), OVER(PARTITION BY) functions

3 Uploading Top Drugs Dataset Into GitHub Database (MySQL) by hosting the dataset on GitHub website

4 Using Streamlit to pull in the dataset, process, and display the top recommended drugs for chosen condition

5 Deploying PeopleRX Drug Recommender Web Application on Streamlit Cloud

EDA Findings

- Top 6 most common medical conditions:
  1. Birth control
  2. Depression
  3. Pain
  4. Anxiety
  5. Acne
  6. Bipolar Disorder

Streamlit Web Application

PeopleRX: Top Drugs Recommender

Select the Condition

HIV Infection

Detailed Data View

	↓ reviews	drugName	condition	rating	rank
110673	86	Efavirenz / emtricitabine / tenofovir	HIV Infection	8	76
77785	86	Efavirenz / emtricitabine / tenofovir	HIV Infection	9	50
19897	86	Efavirenz / emtricitabine / tenofovir	HIV Infection	10	1
105533	84	Atripla	HIV Infection	8	73
70449	84	Atripla	HIV Infection	9	48
5883	84	Atripla	HIV Infection	10	1
124711	72	Stribild	HIV Infection	8	69
98164	72	Stribild	HIV Infection	9	60
56916	72	Stribild	HIV Infection	10	1
108332	71	Cobicistat / elvitegravir / emtricitabine / tenofovir	HIV Infection	8	69

Future Work

- Rank drugs based on both number of reviews and rating

- Add a histogram displaying different types of drugs and their review numbers for a chosen condition

Thank you!