

Predicting Provider Prescriptions

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July 14, 2018

1 Problem Description

Given a dataset with prescriber specialty information and drugs prescribed, for the year 2014, we aim to predict the demand for various prescription drugs in 2015.

2 Client

The client is a network of clinics and hospitals that provides healthcare in various regions across the United States. They employ general practitioners and specialist doctors. The client would like to ensure that drugs that are commonly prescribed to patients are easily available. Currently, the hospital pharmacies and clinics keep stores of drugs on hand. They would like to have a more sophisticated system for ensuring that the drug supply doesn't run out.

Based on our recommendation, the provider will adjust their restocking policies in hospital pharmacies and clinics within their network.

3 Data

We will work with the Opioid Prescriber Dataset made available by AJ Pryor on Kaggle. The dataset contains prescriber information for 25,000 unique prescribers, including the number of drug prescriptions each provider wrote for 250 common drugs in 2014.

This dataset contains additional information about opioid overdoses and opioid drug names that will not be used to solve this particular problem, but may be used during the exploratory data analysis portion of the project.

4 Approach to the Problem

We will use multiple linear regression. The dependent variable is the number of units of a particular drug that will be prescribed. Features will include provider specialty, state, and information about their drug prescriptions such as total number of drugs prescribed in 2014 and total number of different drug types prescribed.

5 Deliverables

Code for the project will be available on github, and a presentation with summary results will be provided.