Methodology Open Prescribing (All Code Done in R)

Data Extraction, Pre-processing, and Cleaning

* Packages: Tidyverse and OpenPrescribingR
* Overview – pulled aggregated cost and prescription volume for all drug codes by Region
  + Extraction
    - Drug details to get all BNF Drug Codes
      * Removed items that were not prescription drugs (i.e. dressings)
    - Ran OpenPrescribingR function spending\_by\_CCGs to get all monthly prescription counts and total cost for each Drug Code per month
  + Pre-processing
    - Used a pull of chapters to get all possible CCGs
      * Link CCG’s to CSV with CCG region from uk dept of statistics
      * Extracted by CCG, but rolled up to Region
    - All possible month ranges are accounted for through joins for lag function for Year over Year analyses
      * Essentially have a row with min blanks for every Year-Month, Drug Class, Region combination
    - Structured datasets in long-pivot format for analyses

Descriptive Statistical Visualizations

* Packages: Tidyverse & ggplot
* Analyses
  + Volume
    - Plot & table of prescription volumes/cost each year by month
  + YoY By Drug Class
    - Plot & table of year over year change of prescription volumes/cost by month
  + YoY Comparing Drug Classes
    - Plot & table showing the difference between two drug classes of year over year change of prescription volumes/cost by month
  + Percent of Region Comparison
    - Plot & table displaying the total percentage of a drug classes volume of prescriptions/cost for a given month based on the entirety of a region
      * i.e. Antidepressant Drug Code % of National Drug Volume
      * i.e. Antiepileptic Drug Code % of London Drug Volume

Shiny App Incorporation

* Packages: Shiny
* Created app that allowed for user inputs and created dynamic visuals that performed analyses described above
* Filters used as inputs- Region, Drug Code BNF Level, Two Drug Codes to Compare, Year
* Output a graph and a table for each analysis