Project 1: Accidental Drug-Related Deaths for Connecticut

Team Members:

Kensuke Suzuki

Prerak Patel

Daniel Santa

Loretta Cortez

Objective: Analyze data set to support or disprove initial hypotheses, and answer questions about the reported deaths.

Hypothesis 1: Accidental Drug-Related deaths increased year-over-year

Hypothesis 2: There is a seasonal impact on accidental drug-related death rate

Additional question 1: Do Age, Race or Gender have any correlation to death rate?

Additional question 2: Which drugs are most frequently the cause of accidental death, and has this changed over time?

Data Cleanup: Code was written to refine data set, eliminating null data, eliminating columns with duplicate data or data that was not pertinent to this project, and updating data types where necessary.

Data Sources:

<https://catalog.data.gov/dataset/accidental-drug-related-deaths-january-2012-sept-2015>

<https://www.census.gov/quickfacts/CT>

<https://google.com/maps>

<https://worldpopulationreview.com/states/connecticut-population/>

Findings:

* Mortality rate increased year-over-year
* There does appear to be a seasonal impact on mortality rate, with increases seen during the Winter/Holiday season
* The top three drugs that are the cause of accidental drug-related deaths are:
  + Heroin
  + Fentanyl
  + Cocaine
* Gender appears important – females accounted for 26% of deaths, but according to the US Census Bureau, female population for Connecticut is 51.2%. This leads to the belief that males participate in more at-risk behavior and therefore have a higher death rate.
* Race does not appear to be a determining factor of accidental drug-related death – 78% of deaths were attributed to White race. According to US Census Bureau, the White population of Connecticut is 80%, so death rate by race is in line with general population distribution.
* Age appears to be related to death rate. 39% of the mortality rate falls in the 25-40 age group, with another 49% falling in the 41-65 age group. These groups can be expected to have the most available disposable income, and therefore more likely to be able to indulge in drug use. Since two of the top three drugs involved in the accidental drug-related deaths are illegal, it is reasonable to assume that these will be expensive to obtain.
* The most accidental drug-related deaths occur in Hartford.

Final Conclusions:

If some agency were to attempt outreach with the goal of decreasing accidental drug-related deaths, the best demographic to target would be:

* Males
* Age 41-65
* White
* Hartford, CT