**Slide 1 brad**

**Slide 2 brad**

**Slide 3 Source data Tim**

We sourced our data from amazon web services data exchange, using the original format csv we looked at the drug overdose by type, state and year

We also analyzed the unemployment rate by state and year

Lastly we looked at drug overdoses compared to percentage of total deaths in the state.

**Slide 4 tim**

For our ETL process we loaded the CSV’s into jupyter labs

Using pandas to transform and combined data

With this we developed three functioning machine learning programs, one for each drug, to analyze unemployment and overdose data sets.

This was with the intent to predict future overdoses based on unemployment rate and our 3 drugs of choice

Heroin, cocaine and meth

We visualized the results and published through tableau

At the bottom of this slide you can see our process from Amazon Web Services to jupyter to sigh-learn and finally to tableau

**Slide 5 Machine learning process-manny**

For our machine learning process

We imported and transformed the csv data and then split training and testing data.

We then scaled thed data to create models and building layers to compile and fit the model

With optimizers being “adam”

And loss as “categorical corssentropy”

And the training epochs at 60

**Slide 6 manny**

The results of this we saw heroine at a loss of 6.03 with the accuracy of 0.290

Cocaine at a loss of 6.92 with the accuracy of 0.186

And meth at a loss of 4.14 with the accuracy of 0.266

**Slide 7 sam**

To conclude our observations we discovered:

Some states showed declines in overdose rates when unemployment rates decreased

The majority of overdoses that occurred were non-heroin based opiods including synthetis

We also noticed the majority of states showed a decrease on overdose rates while some maintained the same overdose rates without death

Although it cannot be proven, we believe that more wide spread use of products like Narcan may have helped save some patients being treated for overdose

Lastly the we thought it was worth noting that the majority of the people surveyed did not list drugs or drinking as their primary response to stress factors.

While we strive to be as accurate as possible we did come across issues where the overdose rates were spotty and some state records were not recorded.

**Slide 8 sam**

Live share sam

**Slide 9 kill slide sam**

Thank you,

We will now open up for any questions