DEATH & LEGISLATION

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INTRODUCTION

- According the CDC, heart disease, stroke, diabetes, and cancer, are the leading causes of death in the US

- All are related to obesity, nutrition, and physical inactivity

- Nearly $173 Billion is spent per year on healthcare for obesity

Feeling the Pressure?
High Blood Pressure (or Hypertension) Control Is Possible

Nearly **1 in 2** adults has high blood pressure

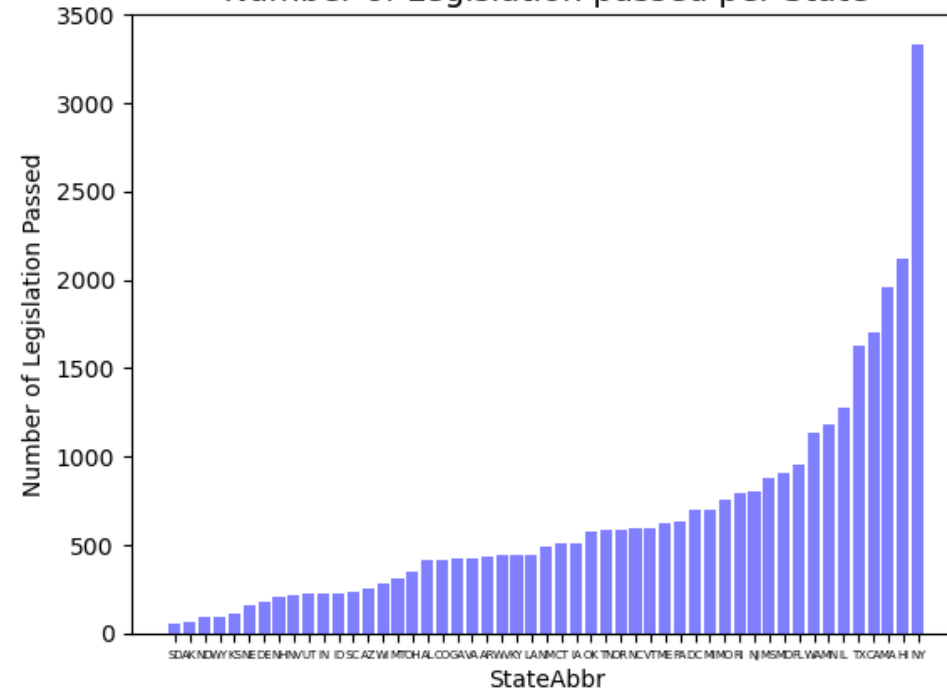Yet only about **1 in 4** has it under control to <130/80 mm Hg

If left uncontrolled, high blood pressure can increase a person's risk for **heart disease, stroke, heart failure, kidney disease, pregnancy complications,** and **cognitive decline** later in life.
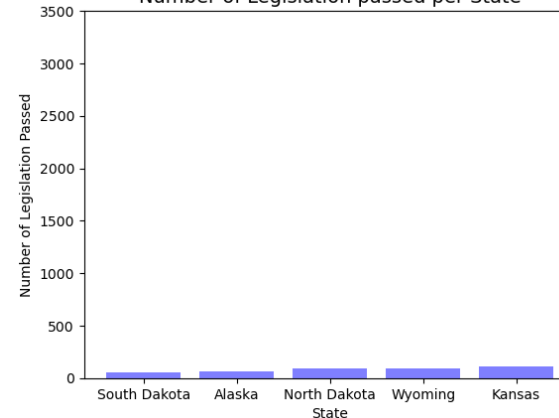
SOLUTIONS

- Offering healthier food in educational facilities & work places

- Improving access to healthy foods in communities

- Supporting lifestyle changes to reduce obesity

- Educating the public on healthy lifestyles

- What have state governments done to promote good nutrition and physical activity? Particularly in legislation.
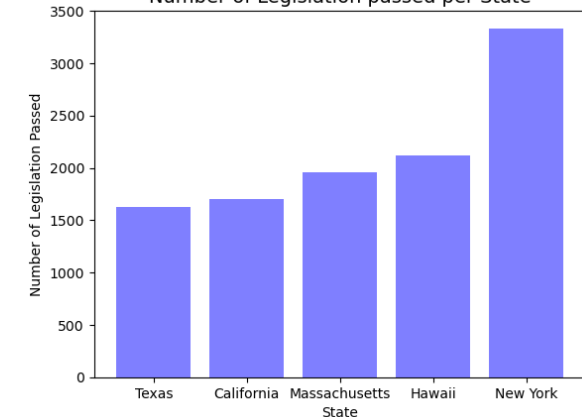

Number of Legislation passed per State

RESOURCES: https://www.cdc.gov/chronicdisease/resources/publications/factsheets/nutrition.htm
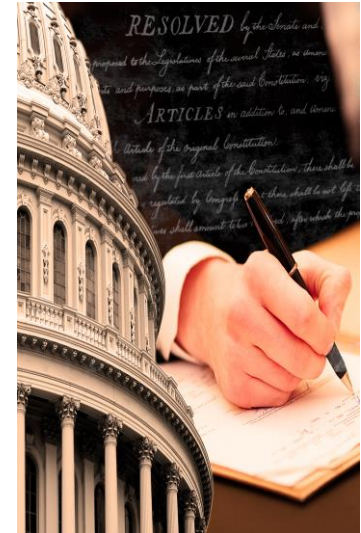
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TOPIC

1. What impact does legislation that is focused on health and nutrition have on the leading causes of death in each state over the years?

2. Does it make a difference?

Resources:
Legislation Data - https://catalog.Data.Gov/dataset/cdc-nutrition-physical-activity-and-obesity-legislation
Death Data - https://catalog.Data.Gov/dataset/nchs-leading-causes-of-death-united-states
Population Data - https://www2.census.gov/programs-surveys/popest/datasets/2010-2017/state/asrh/

DATA COLLECTION, CLEANING, & EXPLORATION

OUR DATA SETS

Health Laws Passed by States

	Year	StateAbbr	State	HealthTopic	PolicyTopic	Setting	Status
0	2009	CO	Colorado	Nutrition	Appropriations	School/After School	Enacted
1	2010	KY	Kentucky	Obesity	Food Restrictions	Community	Enacted
2	2010	KY	Kentucky	Physical Activity	Bicycling	Community	Enacted
3	2010	TX	Texas	Obesity	Sugar Sweetened Beverages	Early Care and Education	Enacted
4	2009	CO	Colorado	Nutrition	Agriculture and Farming	Community	Enacted

Various Causes of Deaths & Counts

	Year	Full Cause Name	Cause Name	NAME	Deaths	Age-adjusted Death Rate
0	2017	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	United States	169936	49.4
1	2017	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	Alabama	2703	53.8
2	2017	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	Alaska	436	63.7
3	2017	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	Arizona	4184	56.2
4	2017	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	Arkansas	1625	51.8

OUR DATA SETS

Populations of States

	NAME	POPESTIMATE2010	POPESTIMATE2011	POPESTIMATE2012	POPESTIMATE2013	POPESTIMATE2014	POPESTIMATE2015	POPESTIMATE2016
0	Alabama	39974	41005	40176	39072	40013	40189	38998
1	Alabama	40095	39893	40923	40125	39187	40287	40164
2	Alabama	41556	40227	39826	40863	40027	39302	40315
3	Alabama	41719	41704	40176	39896	40953	40147	39363
4	Alabama	41251	41720	41625	40120	39894	40799	40078

Final Merged DataFrame

	NAME	Year	Population	Full Cause Name	Cause Name	Deaths	Age-adjusted Death Rate	Death Percentage
0	Alabama	2010	19418292	Accidents (unintentional injuries) (V01-X59,Y8...	Unintentional injuries	2394	49.6	0.012329
1	Alabama	2010	19418292	All Causes	All causes	48038	939.7	0.247385
2	Alabama	2010	19418292	Alzheimer's disease (G30)	Alzheimer's disease	1523	31.2	0.007843
3	Alabama	2010	19418292	Cerebrovascular diseases (I60-I69)	Stroke	2619	51.6	0.013487
4	Alabama	2010	19418292	Chronic lower respiratory diseases (J40-J47)	CLRD	2866	55.4	0.014759

CHART EXPLANATIONS

Charts – Why Line Graphs?

- For this analysis we have chosen line graphs, since it helps to show small shifts that may be getting hard to spot in other graphs

- It helps to show trends for different Years. To compare data, more than one line can be plotted on the same axis.

- Obliviously they are easy to understand.

Why these States?

We have chosen top 5 & bottom 5 states where more/less legislation passed on health and nutrition on the leading causes of death. We figured this with pivot tables. From the data, we have chosen stroke, Kidney diseases, Heart diseases, Diabetes, Suicide and Cancer to analyze the death rate from 2010 to 2017.

The 5 top states :

1. New York

2. Hawaii

3. Massachusetts

4. California

5. Texas

The Bottom 5 states :

1. Alaska

2. Wyoming

3. Kansas

4. South Dakota

5. North Dakota

How made the charts?

For these charts, navigate through the cleaned DataFrames using loc() method to access the group of rows for each states. For these states , corresponding year and death percentage plot the graph.

Example – Kidney Disease Death Percentage in Top 5 States
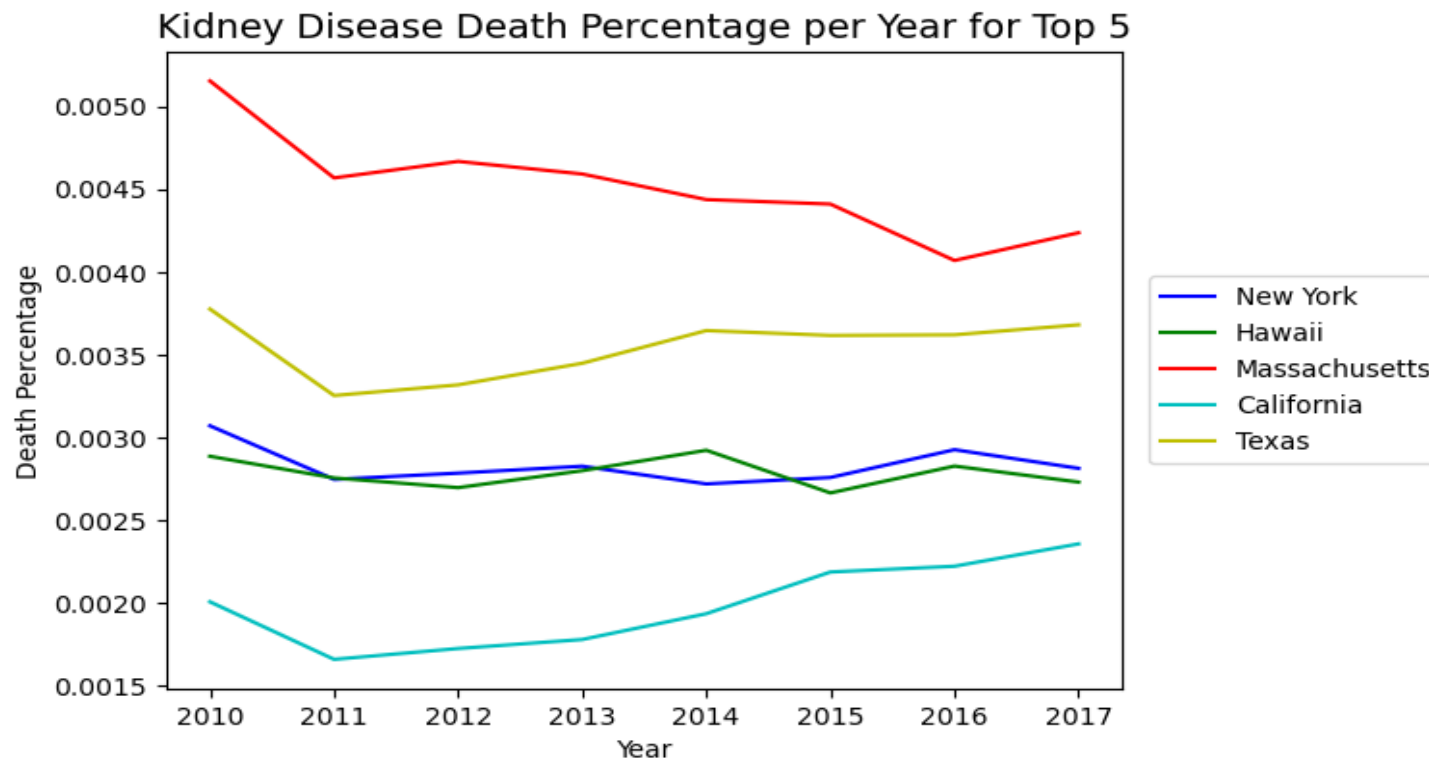
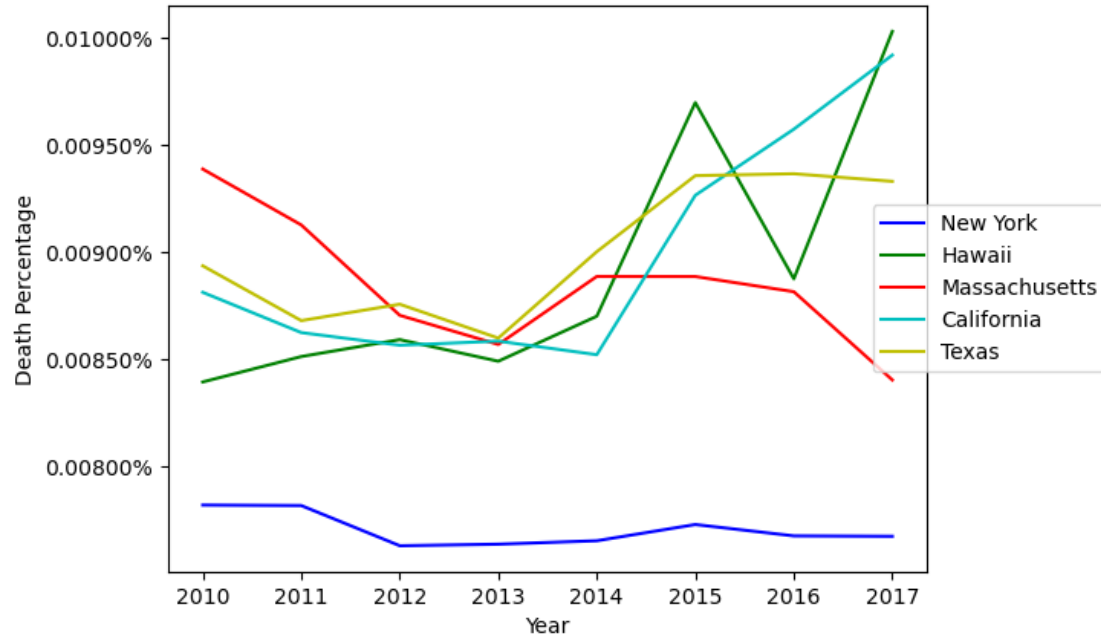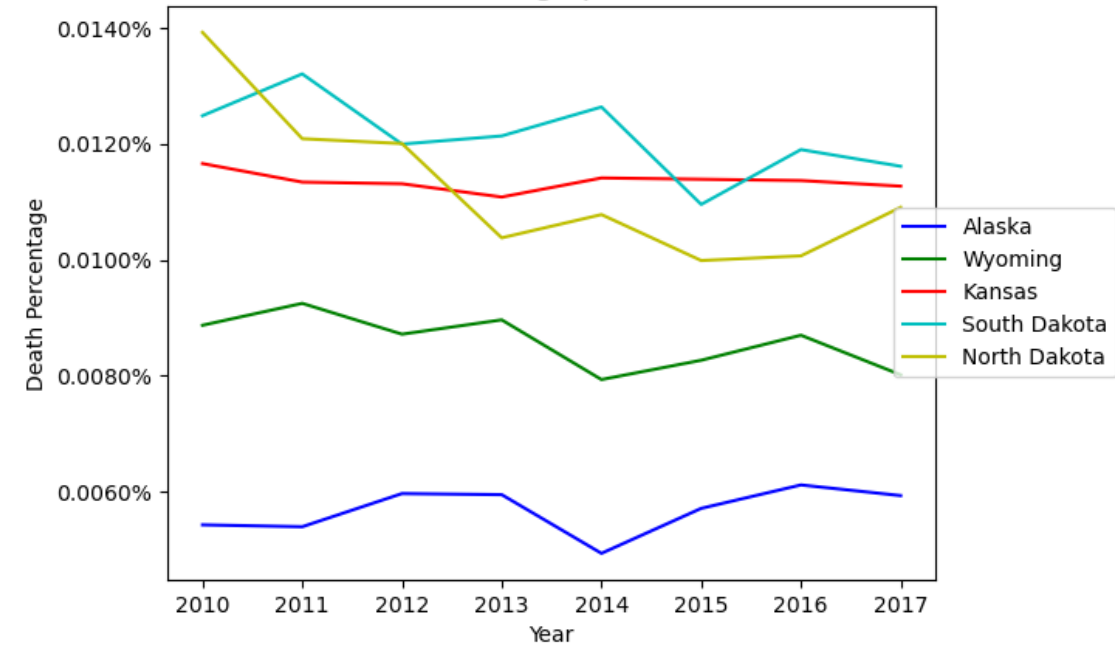# DATA VISUALIZATION & ANALYSIS

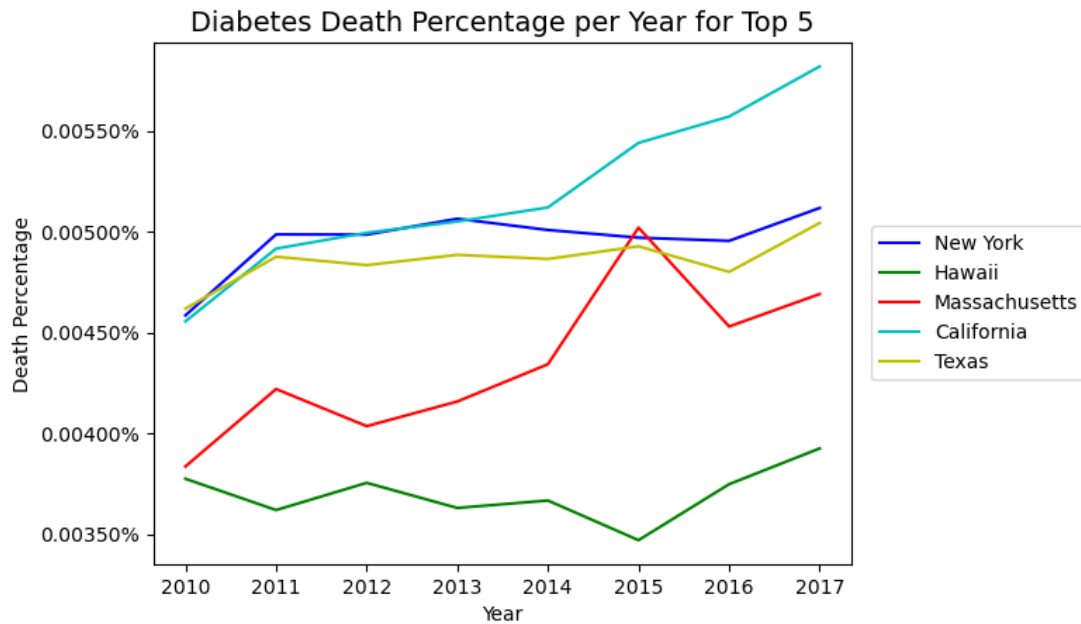# HEART DISEASE
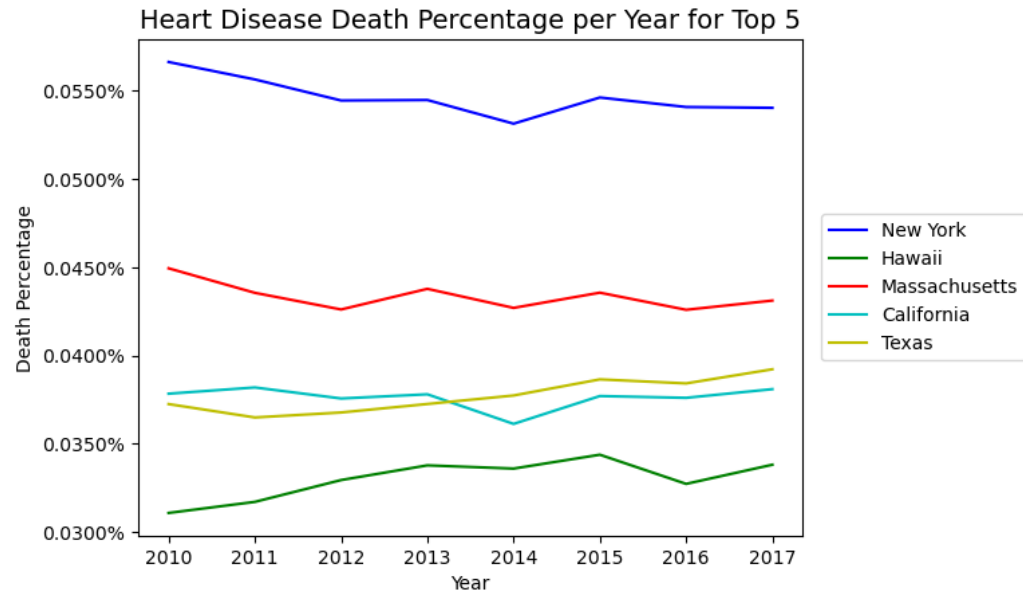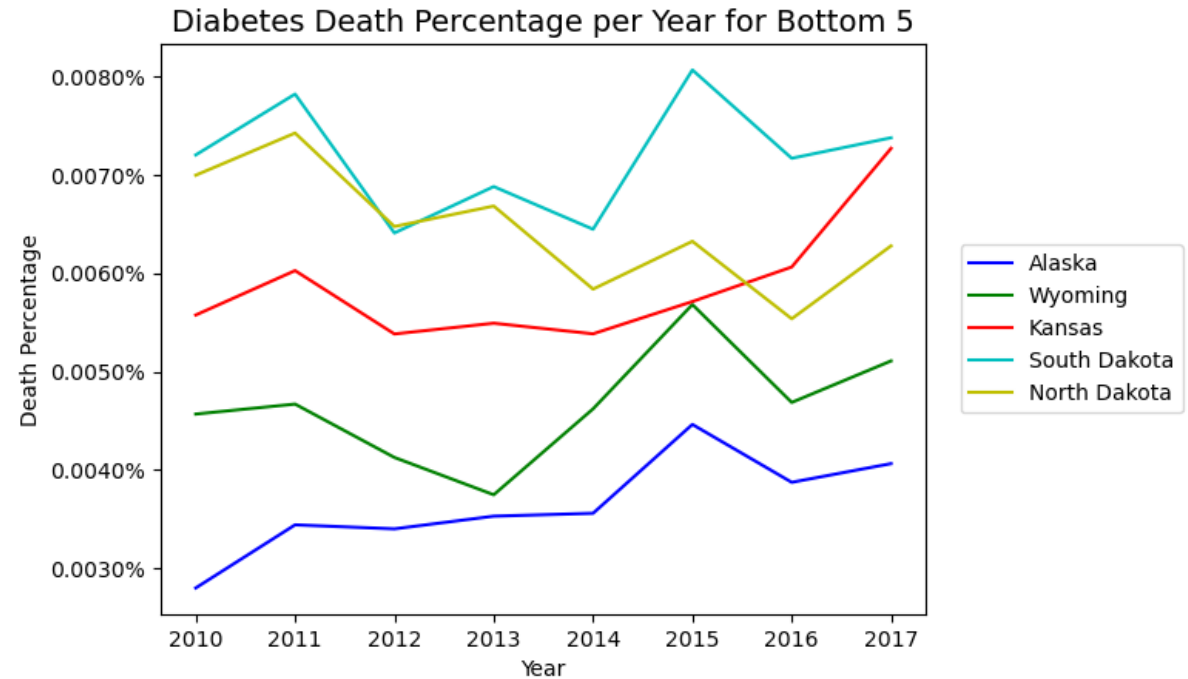

VS
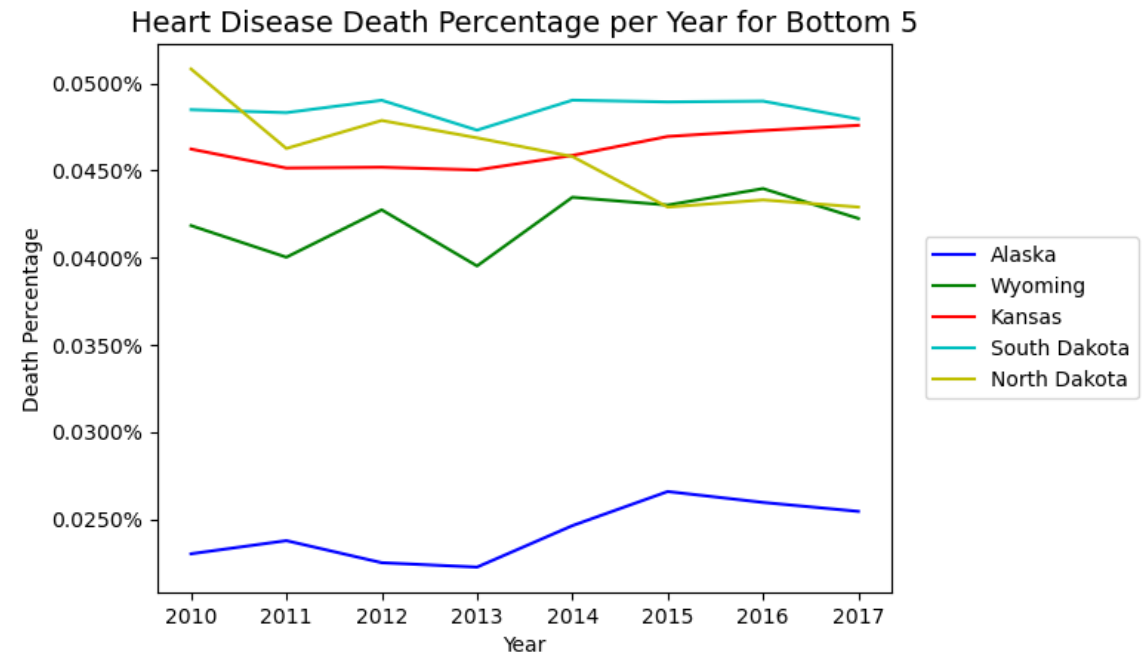
STROKE

Stroke Death Percentage per Year for Top 5

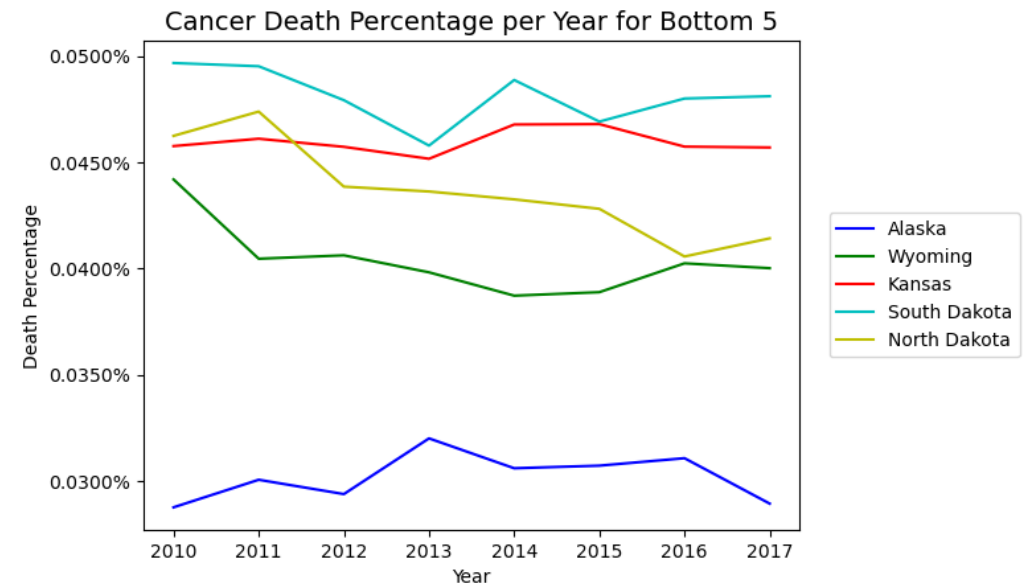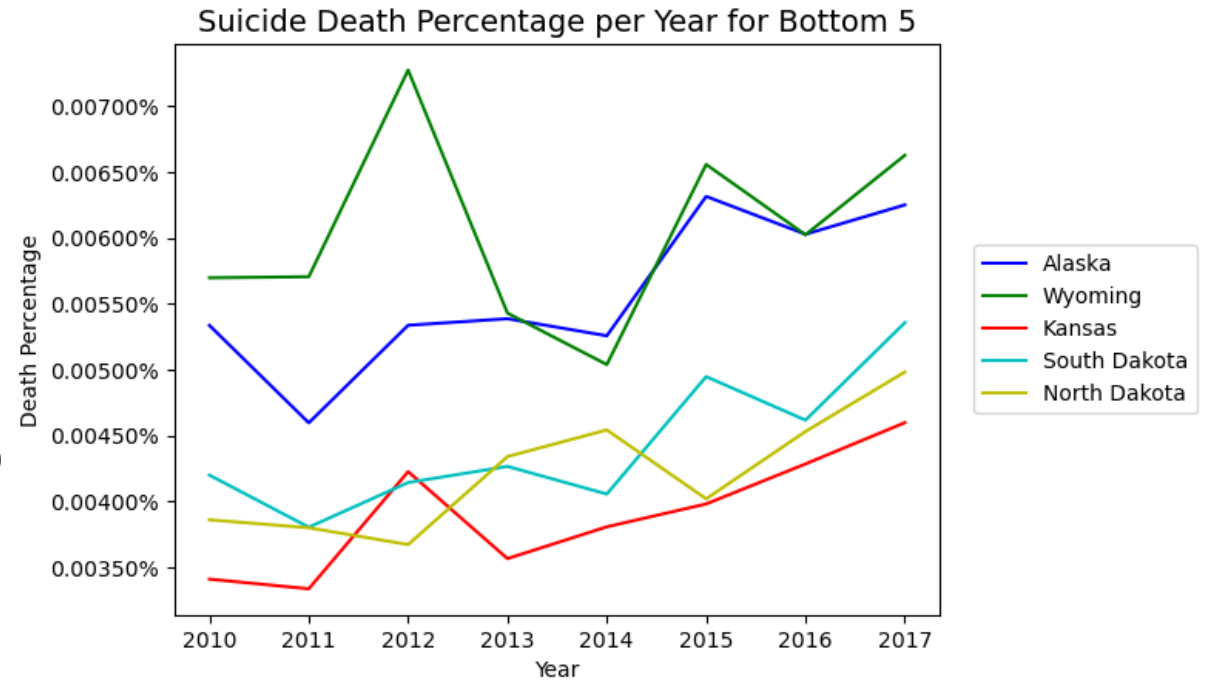Stroke Death Percentage per Year for Bottom 5

VS

DIABETES

CANCER
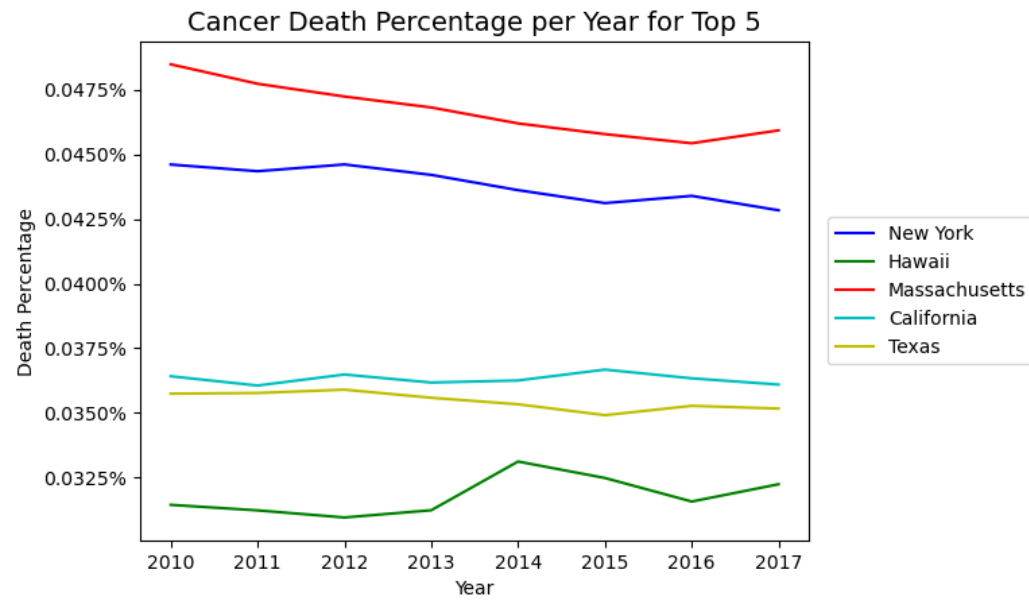
VS

SUICIDE

VS
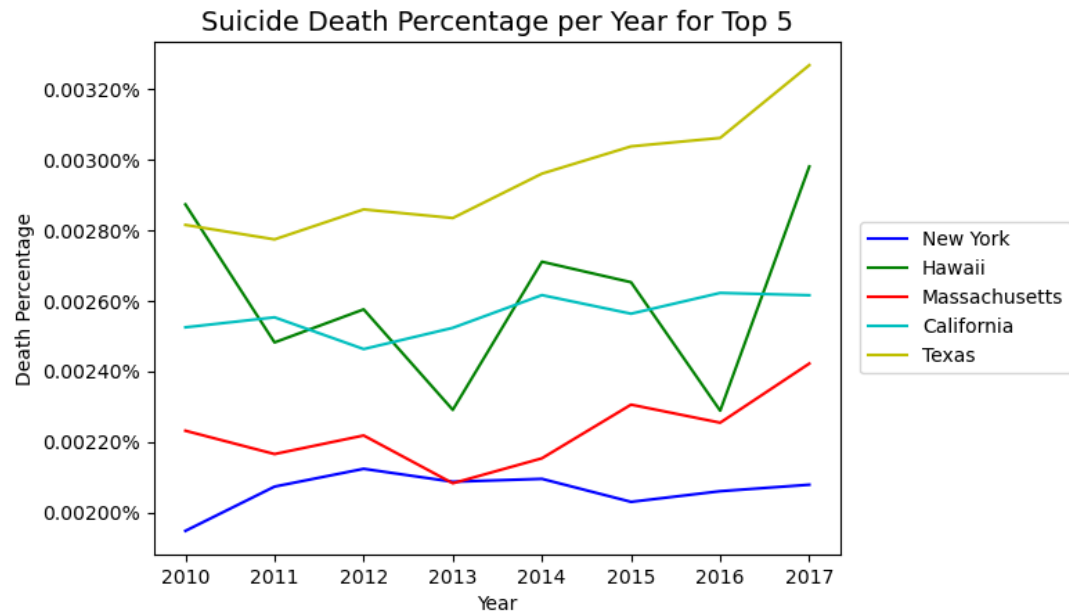
CONCLUSION
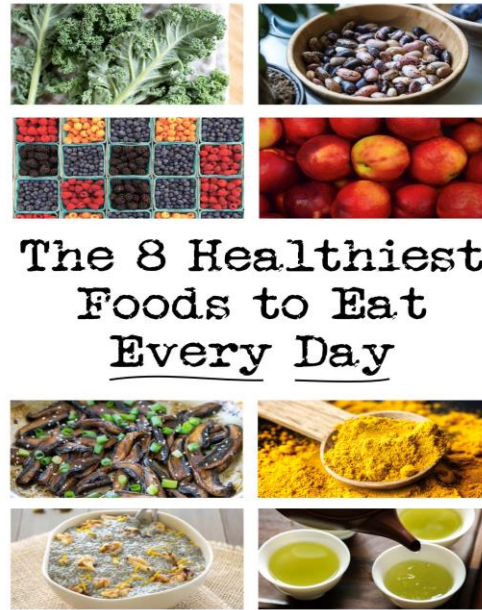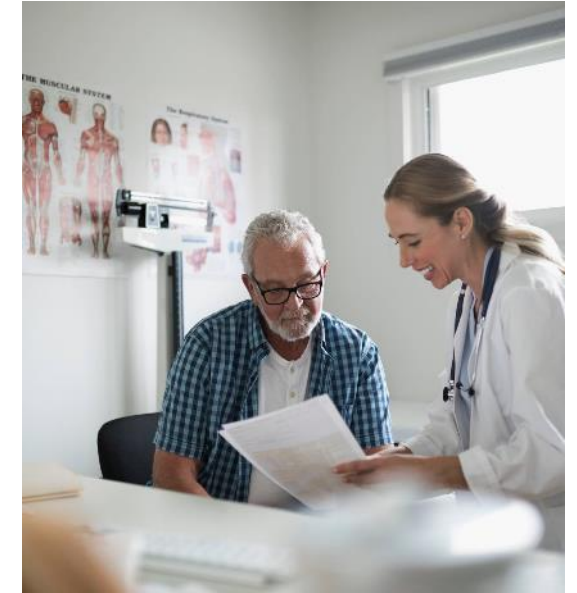
SUMMARY

- Number of Laws did not significantly lower deaths

- Only one cause of death (suicide) had a p-value lower than 0.05

- States with highest legislation, for majority of causes, had lower percentage of death rates than the lower legislation states.

- Limitations of data: multiple causes not related to health, for example, unintentional injury: drug overdose, motor vehicle traffic, drowning, falls, etc. (per CDC)

THANK YOU

Questions?