An Inquiry into the Cross-States Impacts of Gun-Control Legislations following the 2018 Parkland High School Shooting

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About the Data

- CDC's WONDER "Underlying Cause of Death" database
- Panel Data: 20 years of data (1999-2020) at the state level
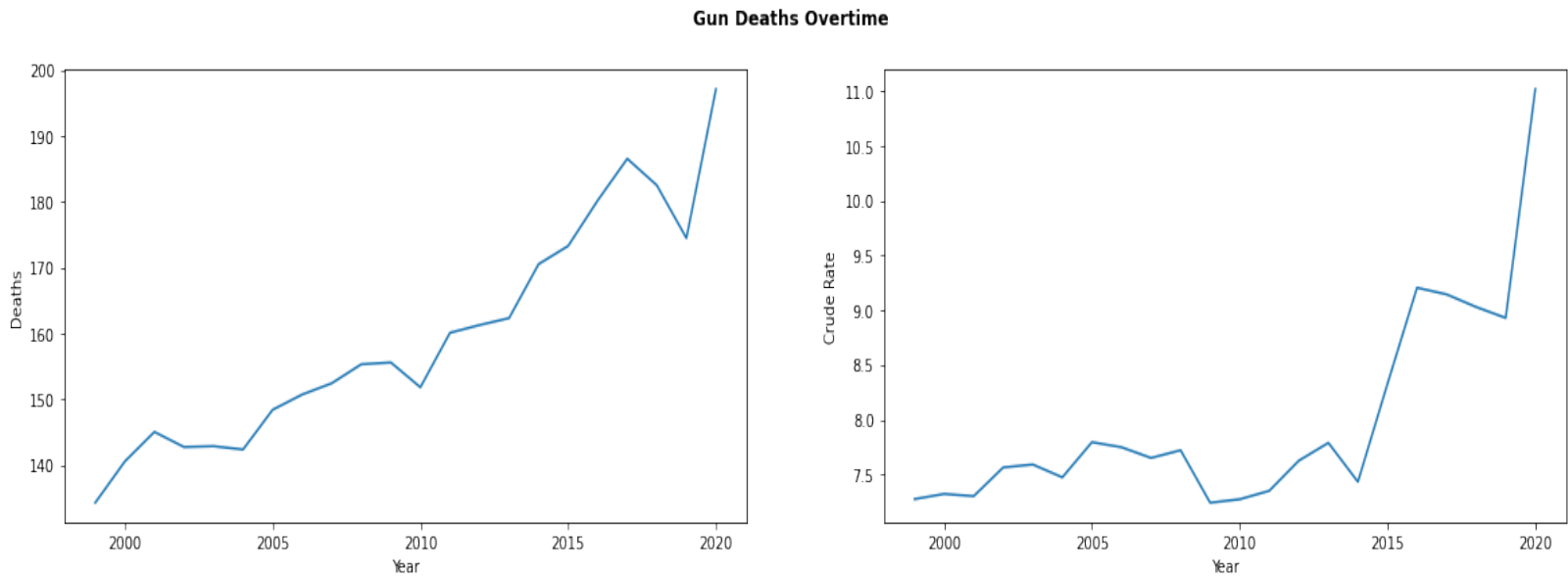- Variables: Ethnicity, Injury Intent, Absolute Deaths Levels, Crude Death Rate

Strengths:
- Granularity → Heterogenous Treatment Effects (ethnicity and injury intent)
- 19 Years of data for Pre-Treatment Period → stronger inference, more robust synthetic controls
- Injury Intent specificities

Weaknesses
- Only 2 years of data for Post-Treatment Period
- Single ethnicity
- Crude Death Rate as a share of population (per 100,000) instead of share of deaths.
- Other variables (income bracket, employment…etc)

Gun Deaths Overtime

Source: Center for Disease Control

- Interesting difference between absolute number of deaths and crude rate
- Drastic increase since 2014

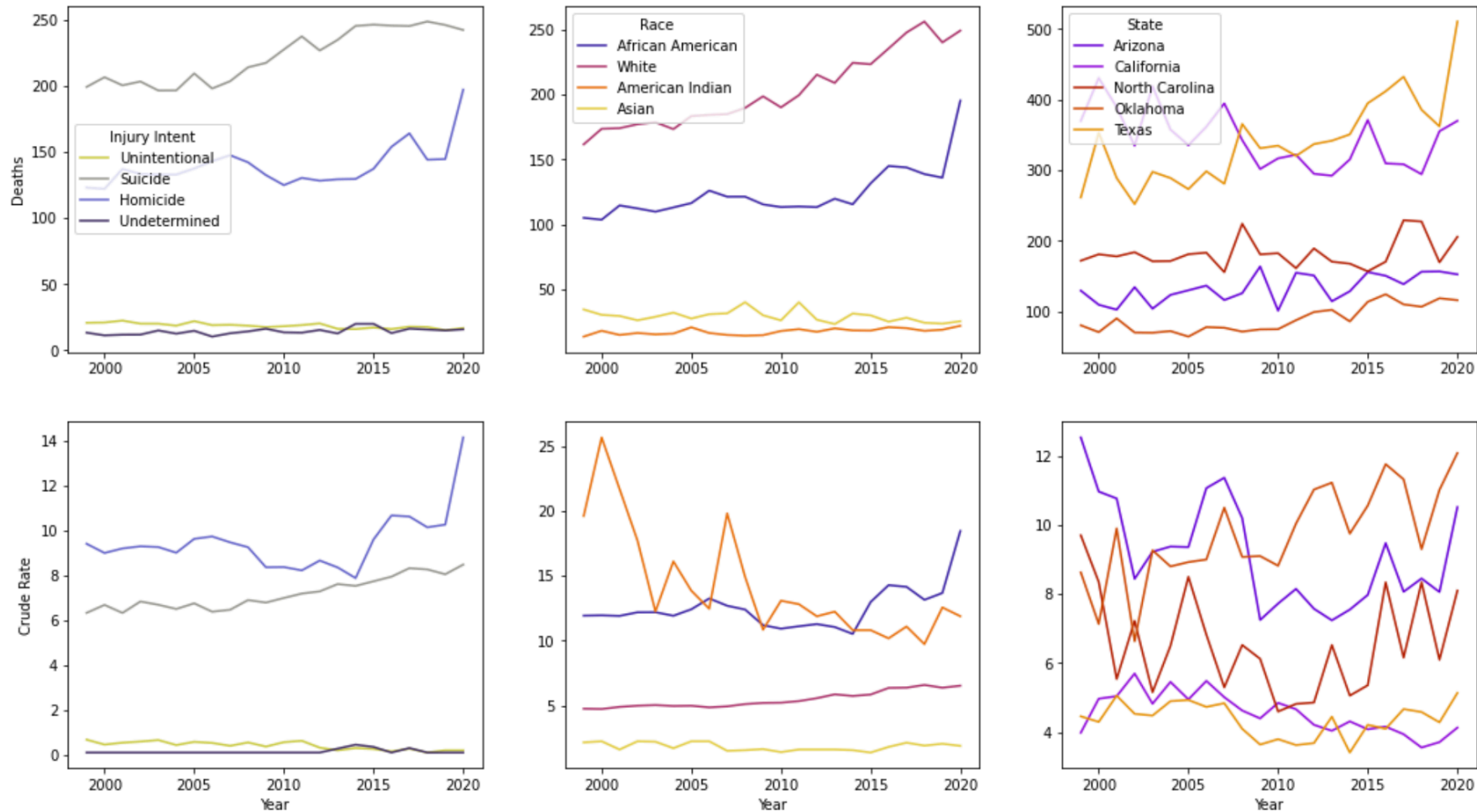**Descriptive Statistics: Absolute Deaths, Crude Death Rate, and Population**

	Count	Mean	Std	Min	25%	50%	75%	Max
Deaths	4432.0	159.906	236.788	10.0	21.0	63.0	200.25	2050.0
Population	4432.0	3970499.157	5207286.663	36257.0	858662.0	2272052.0	5086681.0	29369542.0
Crude Rate	3395.0	8.017	7.56	0.1	2.4	5.8	11.4	65.1

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Gun Deaths Over Time Across Race, Intent, and State
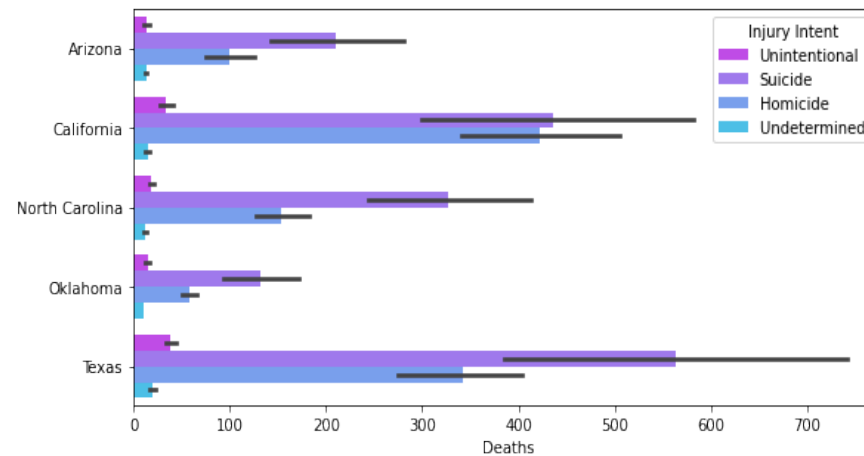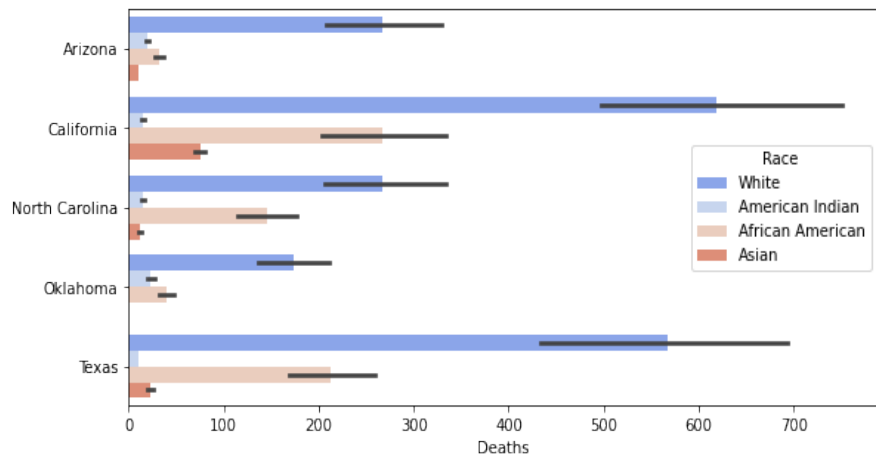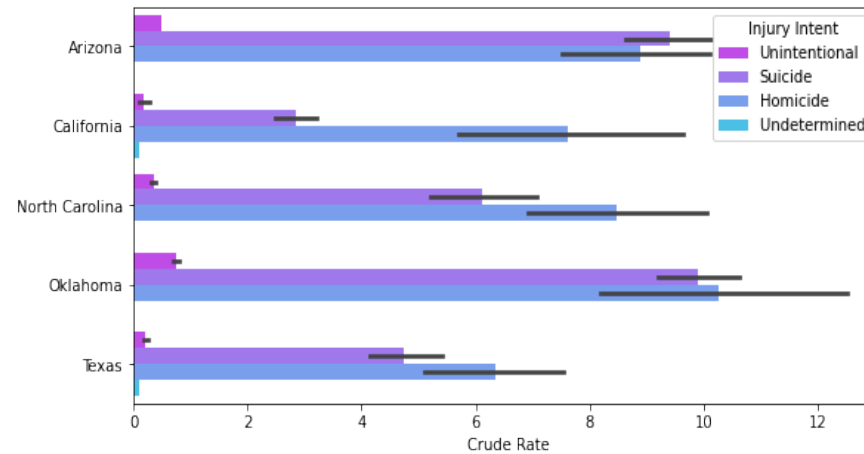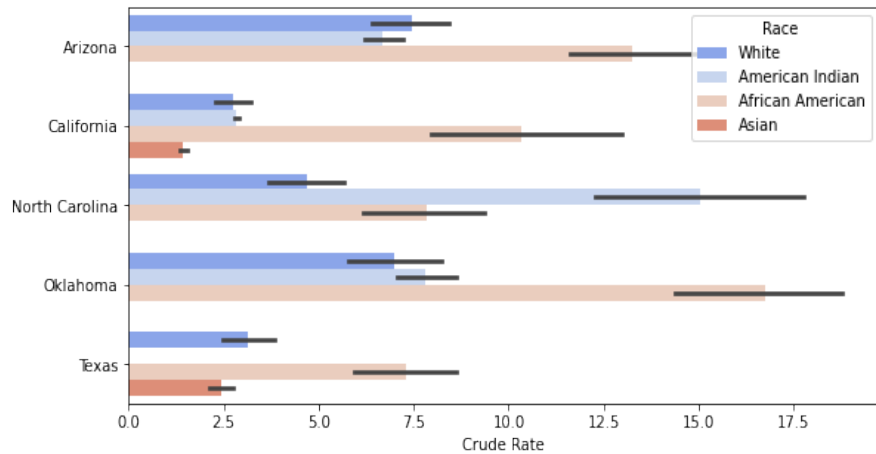

Gun-Related Deaths Over Time

Source: Center for Disease Control

- In majority driven by suicide/homicide
- Overwhelming representation of African Americans and Whites
- Fairly stable yet disparate levels across states

Gun Deaths Characteristics by State

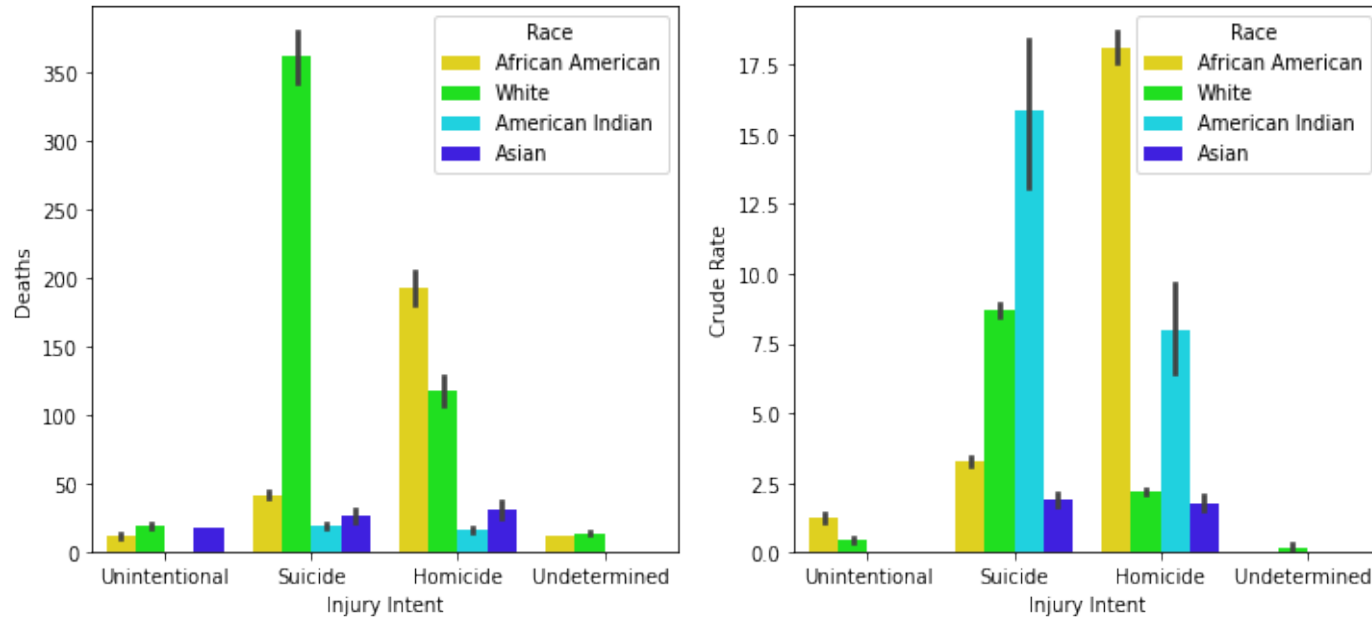Gun Violence Deaths by Type and Race

Source: Center for Disease Control

- High suicide/homicide rates in AZ/OK
- High death rates in North Carolina (mostly driven by American Indians)

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Project Justification

Gun Violence Deaths by Type and Race

Source: Center for Disease Control

- Heavily imbalanced
- Overwhelming representation of African Americans in homicides
- Very important share of suicides for American Indians

Descriptive Statistics: Injury Intent

Injury Intent	Count	Percent	Cumulative_Count	Cumulative_Percent
Homicide	1933	43.615	1933	43.615
Suicide	1913	43.163	3846	86.778
Unintentional	455	10.266	4301	97.044
Undetermined	131	2.956	4432	100.0

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Conclusion

The compiled dataset provides many insights regarding the evolution of gun-related deaths across 50 states for the past two decades. The granularity of the observations, as well as the details about ethnicity and injury intents, will allow us to draw meaningful and important insights about the causal effect of the various gun-control policies that have been implemented following the Parkland High School Shooting in 2018.

Next steps:
- Increase temporal granularity (get monthly level data)
- Increase spatial granularity (get county data → urbanization index as a potential driver of gun-violence)
- Gather average household income data by ethnicity, geographical location