EFFECTS OF THE COVID-19 PANDEMIC ON THE TRAUMA POPULATION AT A LEVEL 1 TRAUMA CENTER

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Background

- Documented increases in gun violence over recent years has renewed interest in determining if there are temporal links to the start of COVID-19 pandemic.[1,5-6]
- COVID-19 had widespread public health impacts, led to worse economic conditions, and disrupted social support systems[2-3]
- Counties with higher poverty levels had higher rates and larger increases in firearm homicides from 2019 to 2020.[1]
- Non-Hispanic black males 10-44 bore the brunt of the national rise in firearm homicide rates.[1]
- Alabama has consistently been among the highest in the country for firearm mortality.[4]
- A record number of firearms were sold in 2020.[5-6]
- There was a rise in alcohol sales and self-reported drug use during the pandemic.[7-9]

Objectives

- Evaluate the effects of the pandemic in our trauma population.
- Determine if there was a link to the rise in violent trauma and the COVID-19 pandemic.
- Map specific zip codes in the region to illustrate neighborhood impacts of trauma and gun violence.

Methods

- A retrospective review of the trauma registry at University of South Alabama University Hospital.
- Parameters evaluated were age, race, gender, Injury Severity Score (ISS), mechanism of trauma, rate of self-inflicted injury, rate of gun shot wounds (GSW), presence of EtOH, drug screen results, and zip code of residence. Secondary outcomes mortality rate and rate of burn traumas were also evaluated.
- Parameters were evaluated for the period January 2018-December 2019, and the two years following, January 2020-December 2021.
- 3 patients were excluded from the pre-COVID data group (5051), and 11 patients were excluded from the COVID-19 data group (5720) due to outlying or unknown mechanism of injury.

Data

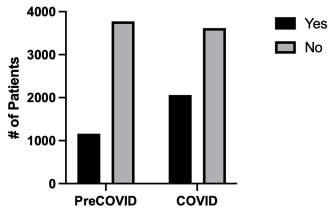

Figure #1 Presence of EtOH

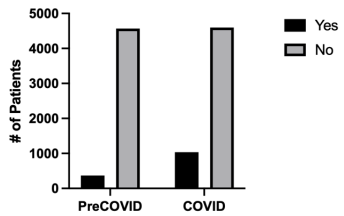

Figure #2 Presence of Drugs

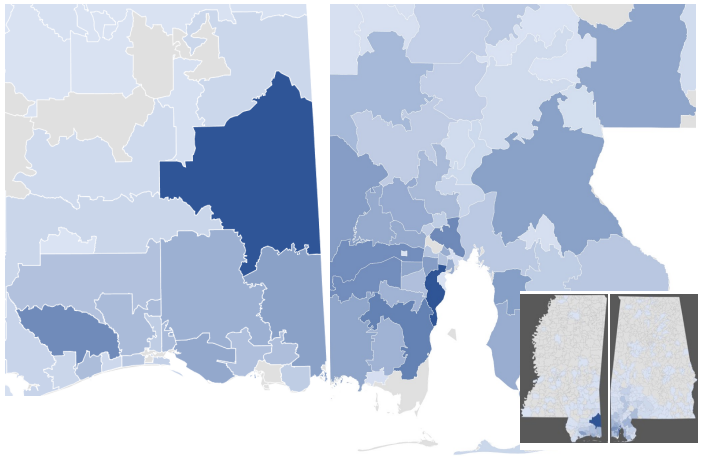

Figure #3 Trauma Distribution Map

Results

- Statistically significant differences were found in the following parameters:
  - Race (*p-value 0.0327*)
  - ISS (*p<0.0001*)
  - Rate of GSW (*p-value 0.0168*)
  - Presence of EtOH (*p<0.0001*)
  - Drug screen results (*p<0.0001*)
  - Burns (*p<0.0001*)
  - Mobile city zip code *36606* had a 91% increase in GSWs (*p-value 0.0451*)
  - Zip codes 36610 and 39452 had a 41% (*p-value 0.0456*) and 58% (*p-value 0.003*) increase in all traumas
- No statistical difference was found for: age (*p-value 0.3623*), gender (*p-value 0.8203*), mechanism of trauma (*p-value 0.9386*), rate of self-inflicted injuries (*p-value 0.5970*), and mortality (*p-value 0.2092*)

Conclusion

- The total rate of GSWs rose by 29% in our trauma population during the pandemic. Locally, zip code 36606 saw a significant increase in GSWs.
- Substance use may have played a role in the rise in trauma and gun violence.
- The economic turmoil of the pandemic could explain the increase in gun violence and substance use, and merits further study.

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