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MARS 5170-90L

Final Project Proposal:

Texas COVID-19 cases analysis with major event from March 2020 to March 2021

Abstract:

Coronavirus, an ongoing outbreak of respiratory disease, has been greatest threat to the global health. The transmissible disease spread from one human to another and caused pandemic all around the world. The United States has been an epicenter of its outbreak and constituently the state of Texas among the top four state. In this study, we study the COVID outbreak in Texas, analyze the effect on lockdown, post lockdown, festive season, and political event.

Background:

Respiratory disease named as Corona virus, occurred in the Wuhan city of China. From December 2019, since its occurrence, the disease has been quickly spreading from the city to the other areas of the world. The novel corona virus was discovered which causes acute respiratory failure syndrome (ARDS) (Yuki et al., 2020). Initially it is believe as the zoonotic transmission with the sea food market in Wuhan city but the human transmission has major role on the outbreak of Coronavirus (Li et al., 2020). World Health Organization declares global pandemic on all the 200 countries. 23 Jan, 2020, the United States of America reports first case of covid19 who was a traveler from Wuhan city of China (Ghinai et al., 2020). Since then the U.S has been an epicenter of novel corona virus with more than 31 million cases reported on 31 March 2021 (Morgan Hines, 2021).

Texas state reports the first case on 4th March 2020 and a fatality on 15th March 2020 after the governor declares the statewide emergency on 13th March 2020. The office of governor signs an executive order on first lockdown from last week of March 2020 to the month of May. Our study will primarily focus on the government decision on the controlling pandemic in Texas and co-relating it with other different events.

Research Question:

The state of Texas has been second most effected state by coronavirus. There have been several orders and/or decision been made during a period of time. The people reaction to the orders and social gathering during the festival period and political campaign may impact on covid cases.

1. Is the order effective on controlling the pandemic?
2. The impact of festival season on the number of cases may be correlative because of social gathering.
3. Political events impose higher risk of spreading the disease because of larger number of presence of people. The impact of 2020 election campaign will be studied.

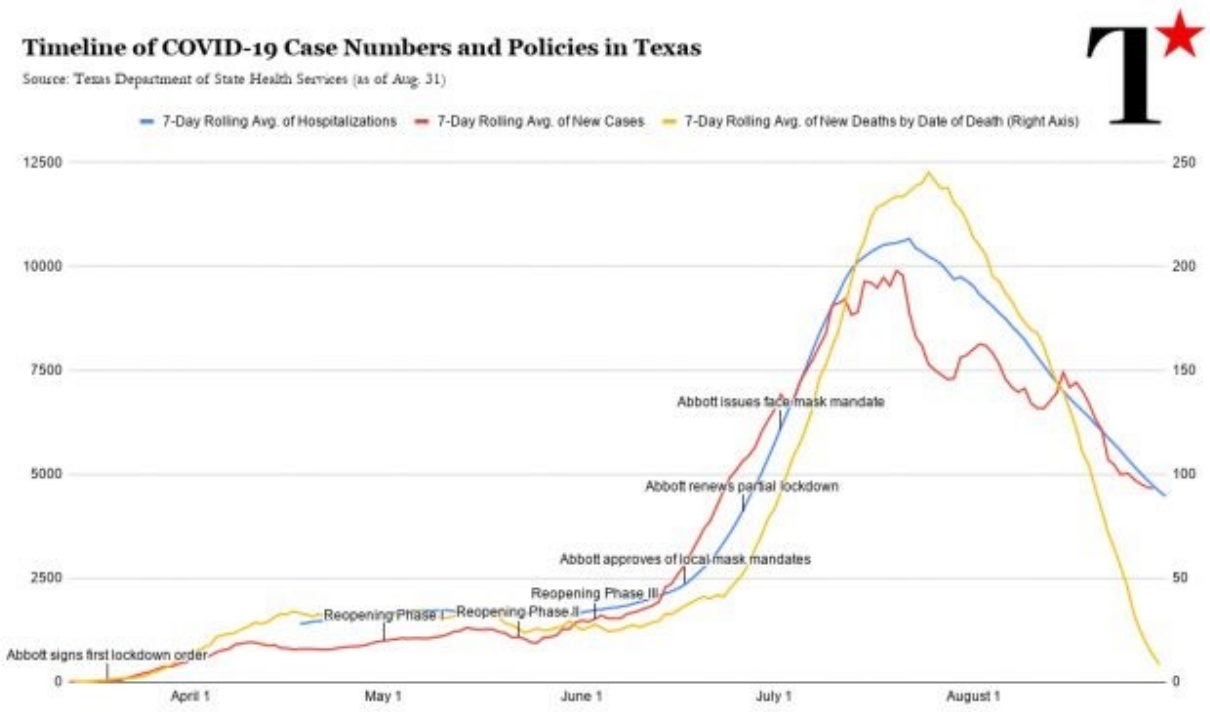

Figure 1: Covid 19 cases, hospitalization case, and death (7 Day Rolling Average) as of 31 August,2020.

Source: Texas Department of State Health Services (As of August 31)

Data and Methods:

Central for Disease Control (CDC.gov), Texas Department of State Health Services (dshs.texas.gov), and Office of The Texas Governor (gov.texas.gov) are the major source of our data. The Texas Department of State Health Service (DSHS) provide data of COVID-19 in csv format. Data consists of daily case count from March 2020 to March

2021. Also, the CDC.gov provides the data of on csv format. However, the event of Texas government will be tallied from governor official website. The initial method is downloading or collecting the data and maintaining it in an appropriate format. After that, the cleaning and processing of data will be done, and importing it on Jupyter, with slicing and indices function being implied. For example, for lockdown period of March to April 2020, the data will be stored and analyzed on that period along with the covid cases in Texas. The plotting of data from matplotlib function provides graphical illustration of increasing number of cases along with the events, and the moving day averages such as 3 day moving average or 7 day moving average of cases will be calculated and analyzed in coding interface. The final output possibly will be the formation of bar race along with the county.

Timeline:

4/6 = Collection of all data

4/11 = Processing and managing the data.

4/18 = Plotting of all possible charts and diagram

4/21 = Writing and making the initial draft.

5/2 = Presentation and Paper final.

References:

Ghinai, I., McPherson, T. D., Hunter, J. C., Kirking, H. L., Christiansen, D., Joshi, K., Rubin, R., Morales-Estrada, S., Black, S. R., Pacilli, M., Fricchione, M. J., Chugh, R. K., Walblay, K. A., Ahmed, N. S., Stoecker, W. C., Hasan, N. F., Burdsall, D. P., Reese, H. E., Wallace, M., … Uyeki, T. M. (2020). First known person-to-person transmission of severe acute respiratory syndrome coronavirus 2 (SARSCoV-2) in the USA. *The Lancet*, *395*(10230), 1137–1144. https://doi.org/10.1016/S0140-6736(20)306073

Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y., Ren, R., Leung, K. S. M., Lau, E. H. Y., Wong, J. Y., Xing, X., Xiang, N., Wu, Y., Li, C., Chen, Q., Li, D., Liu, T., Zhao, J., Liu, M., … Feng, Z. (2020). Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus–Infected Pneumonia. *New England Journal of Medicine*, *382*(13), 1199–1207. https://doi.org/10.1056/NEJMoa2001316

Morgan Hines. (2021, March 29). *CDC reiterates that Americans should "please limit travel" as US hits 30 million cases of COVID-19*. USA TODAY. https://www.usatoday.com/story/travel/news/2021/03/29/covid-travel-should-avoided-cdc-continuesadvise-trips-surge/7050320002/

Yuki, K., Fujiogi, M., & Koutsogiannaki, S. (2020). COVID-19 pathophysiology: A review. *Clinical Immunology*, *215*, 108427. https://doi.org/10.1016/j.clim.2020.108427