Covid19 was not our first choice, we were just trying to find a big and simple database so we could comply with all the requirements that were needed for this project. It took us more than 2 days to finally come to a solution that we wanted our theme to be something that had happened this year or that was actually happening right now.

Initially we tried to choose a theme that was related to what we did for a living, most of the themes were about economic data (GDP, unemployment rates, etc) and even though all the data was from recognized international agencies, most of the countries we tried to compare did not started to record these types of data until after 1990.

We weren’t really keen on the Covid19 subject but in the end, it turned out to be not just interesting but also enlightening.

From January to May there are 26,000 positive cases of Covid19 in Mexico, which means that 1 in every 5 people in Mexico have contracted the virus despite the contingency plan implemented by the Mexican government.

From these positive cases, 58% are men and 42% are women.

Furthermore, we observed that the majority of the cases are between the age of 30 and 60 years old, which is expected given that most of the people between those ages have to work and are potentially more exposed than the ones staying at home

Sadly approximately 10% of the Covid19 cases end up being fatal and more than 80% of the deaths are between the age of 40 and 80 years old.

These results confirm warnings in other countries regarding higher risk for older populations of contracting the disease.

We confirmed that the positive cases over time had an exponential growth (which we knew from countries who were hit by the virus before Mexico). On the other hand, the number of disease cases have a logarithmic growth; this is the result of the model the Mexican government chose to implement called the Sentinel Model.

As we could see in other countries, the density of the population had a strong effect on the number of positive cases. However, each state has implemented a different strategy so the results can vary.

We decided to make our own map and the results were not surprising at all, both the density and the implemented plan had important repercussions.

**What's the distribution of positive cases in Mexico?**

The distribution of positive covid19 cases are significantly greater in areas of high population, commerce and travel such as the capital CDMX, the state of Mexico, Baja California, Tabasco, Sinaloa, Quintana Roo, Puebla, Veracruz and Yucatan.

The positive cases are evenly distributed across the entire country with the exception of less populated desert climates of Sonora and parts of Baja California and the large natural reserve forest areas of Campeche

The state with most cases is Mexico City with 8,158, followed by the State of Mexico with 3,210 and the third being Baja California with 2016, all three states also have the most deaths in the country as well.

**What's the distribution of deaths by state?**

Although the number of positive covid19 cases are significantly greater in areas of high population there is also a higher level of medical care in these areas resulting in a lower mortality rate.

However, the states with the highest mortality rate are Colima with a rate of 51.72%, Oaxaca with 32.97% and Zacatecas with a 30.28% mortality rate.

More rural areas with lower populations such as Colima, Oaxaca, Zacatecas and Jalisco have a much higher mortality rate of approximately 30% compared to only 8% in CDMX. However, this is greatly due to the higher number of cases in metropolitan areas due to the close proximity and higher density of the population.

The distribution of deaths are largely centered around metropolitan areas and cities with high tourism such as Aguascalientes, Santiago de Queretaro, Monclova, Chihuahua, Durango, Tijuana, Mexico City, Puebla, Huitiupán Chiapas and Cancún.

**What's the distribution of Health Centers in relation to deaths?**

The distribution of hospitals and Health Centers largely follows the population of cities along with the number of cases and deaths. For the most part, the capacity of hospitals, although overwhelmed with cases during this crisis, are able to respond to the disease in most cities.

However there are areas with a high number of cases and very few medical facilities such as central Baja California Sur which only has major hospitals at the southern tip of the peninsula and to the nearest alternative is to the east crossing the Gulf in Hermosillo.

Cancún also has very few treatment facilities and patients there may have to be transferred via ambulance to Merida Yucatán or by helicopter or ferry to Cozumel.

Given the high demand for beds, hospitals in cities with very few reported cases could be used to treat patients from surrounding areas which are currently at full capacity.