Analyzing the Business Makeup of Areas in Chicago Most and Least Affected by COVID-19

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Introduction

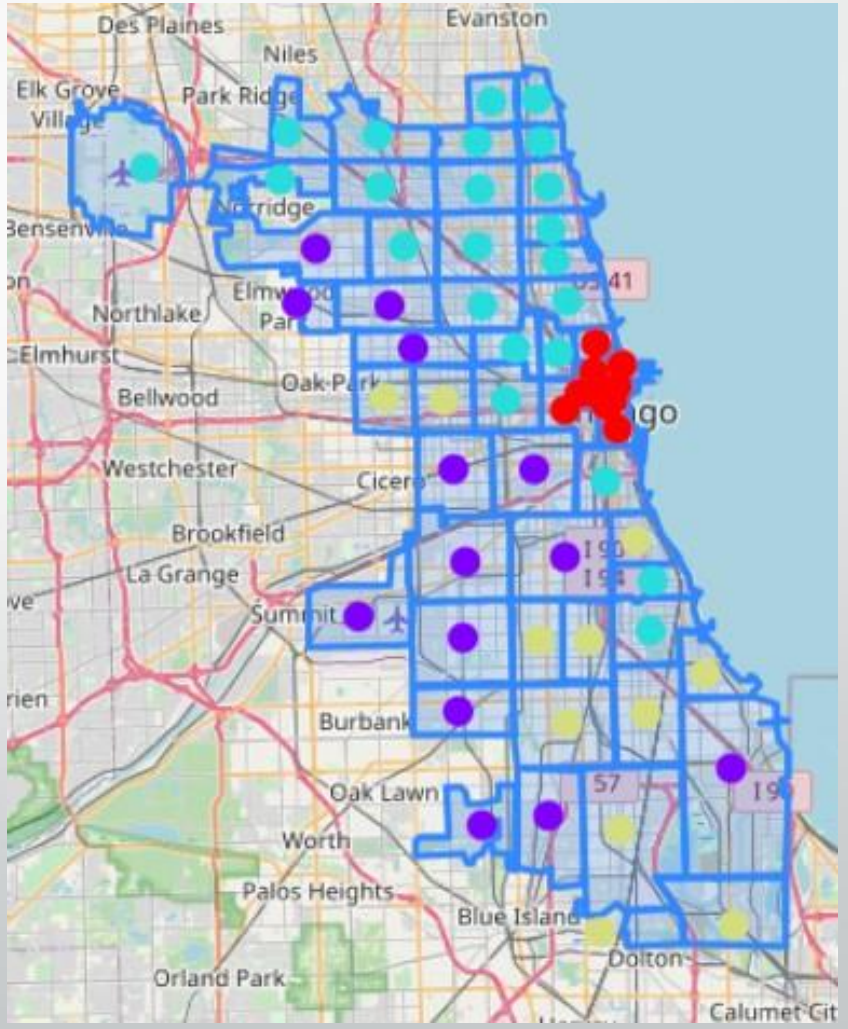
- Covid-19 has affected everyone in some way shape or form
- Chicago has areas that have been affected more and less than others
- We will be comparing by Zip Code:
  - Case Rate per 100K
  - Death Rate per 100K
  - Test Rate per 100K
- Cluster analysis will be used to help compare and contrast different areas

Data

- Data will be gathered from the City of Chicago data portal
- GeoJson boundary file from the city will help visualize
- Foursquare will be used to gather business data of Zip Code

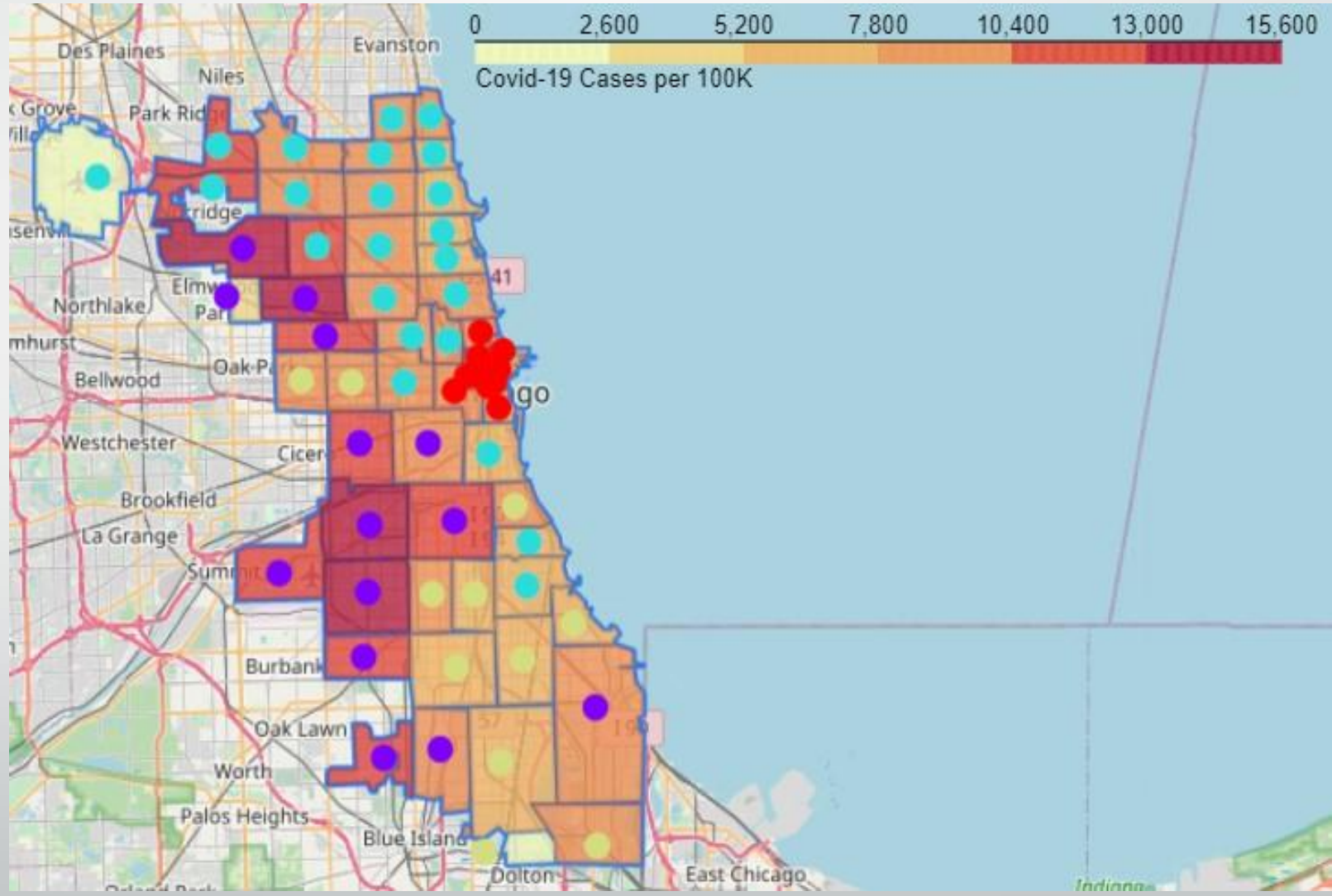
Clustering of the Businesses

- Split in to 4 clusters
- Split geographically
  - West (Cluster 1)
  - North (Cluster 2)
  - South (Cluster 3)
  - Central (Cluster 4)



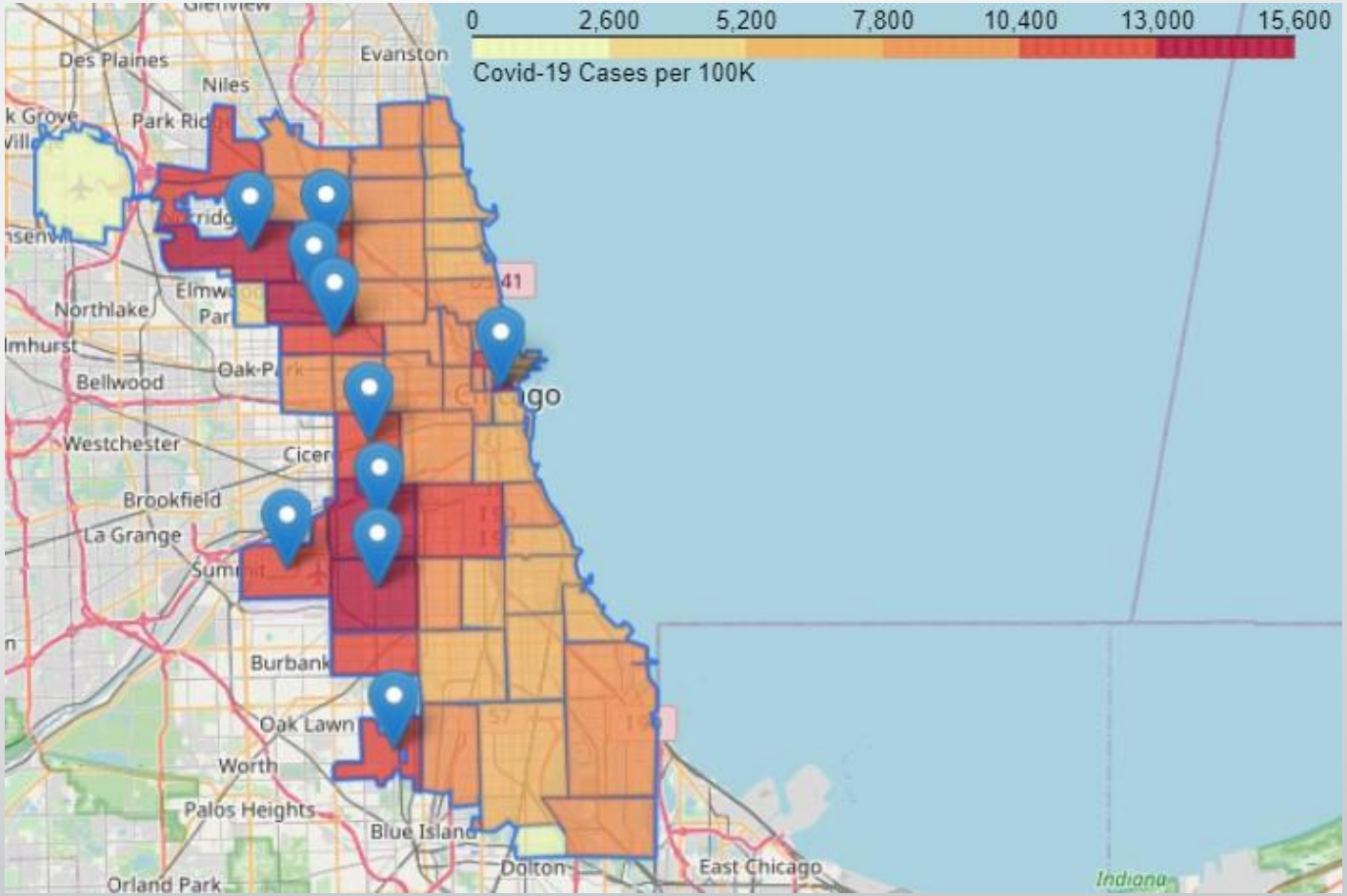
Cases per 100K with Clusters

- Area in purple (Cluster 1) showing the darkest shading
- Mexican restaurants were either first, second, or third most common venue



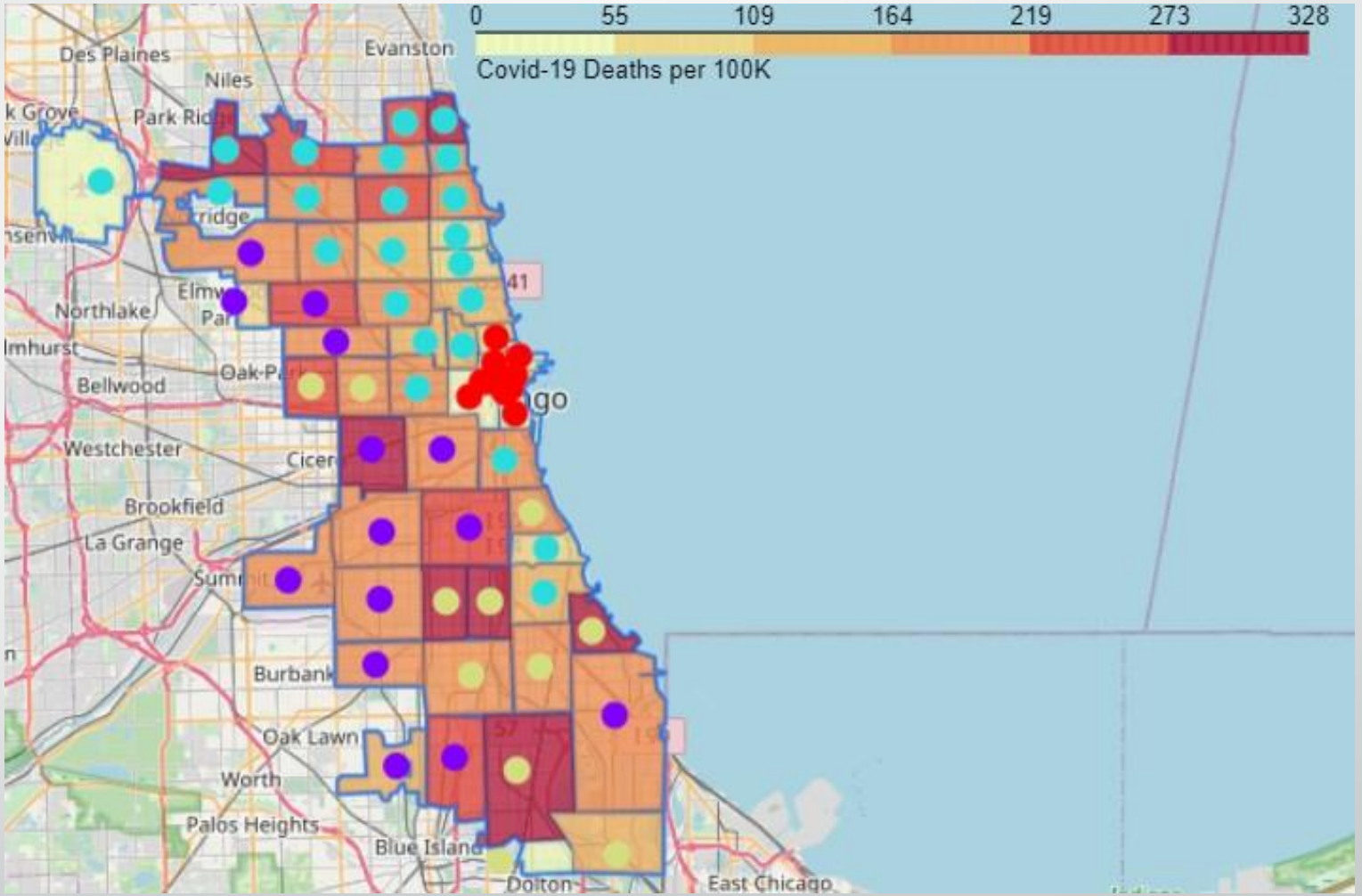
Cases per 100K with 10 Highest Rates

- Mostly concentrated on the west side of the city
- Outlier in central area
  - Lower population so number might be skewed



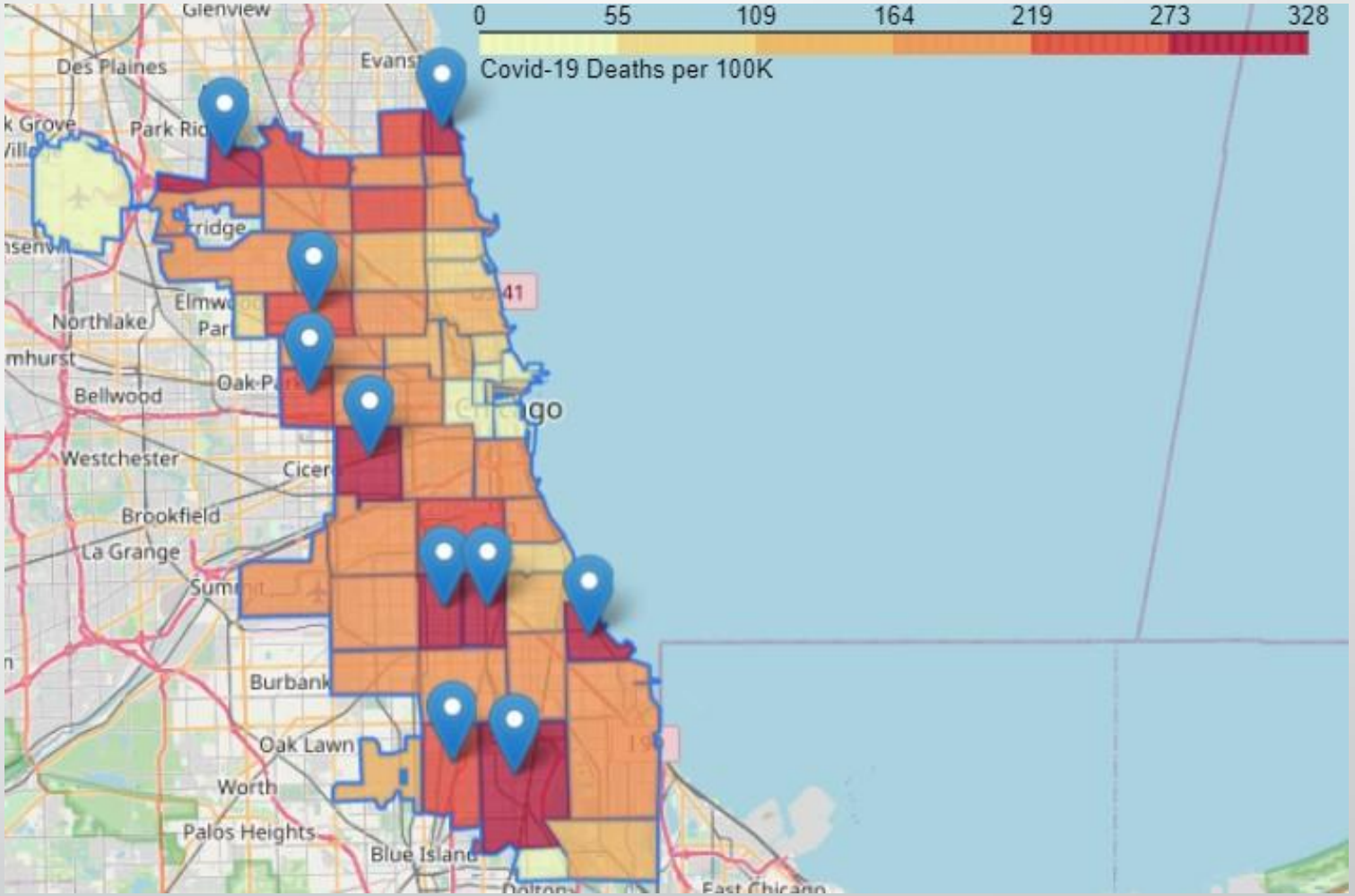
Deaths per 100K with Clusters

- No clear cluster associated with darker shadings
- Different data (socioeconomic or other access to health care) may be needed to find a connection



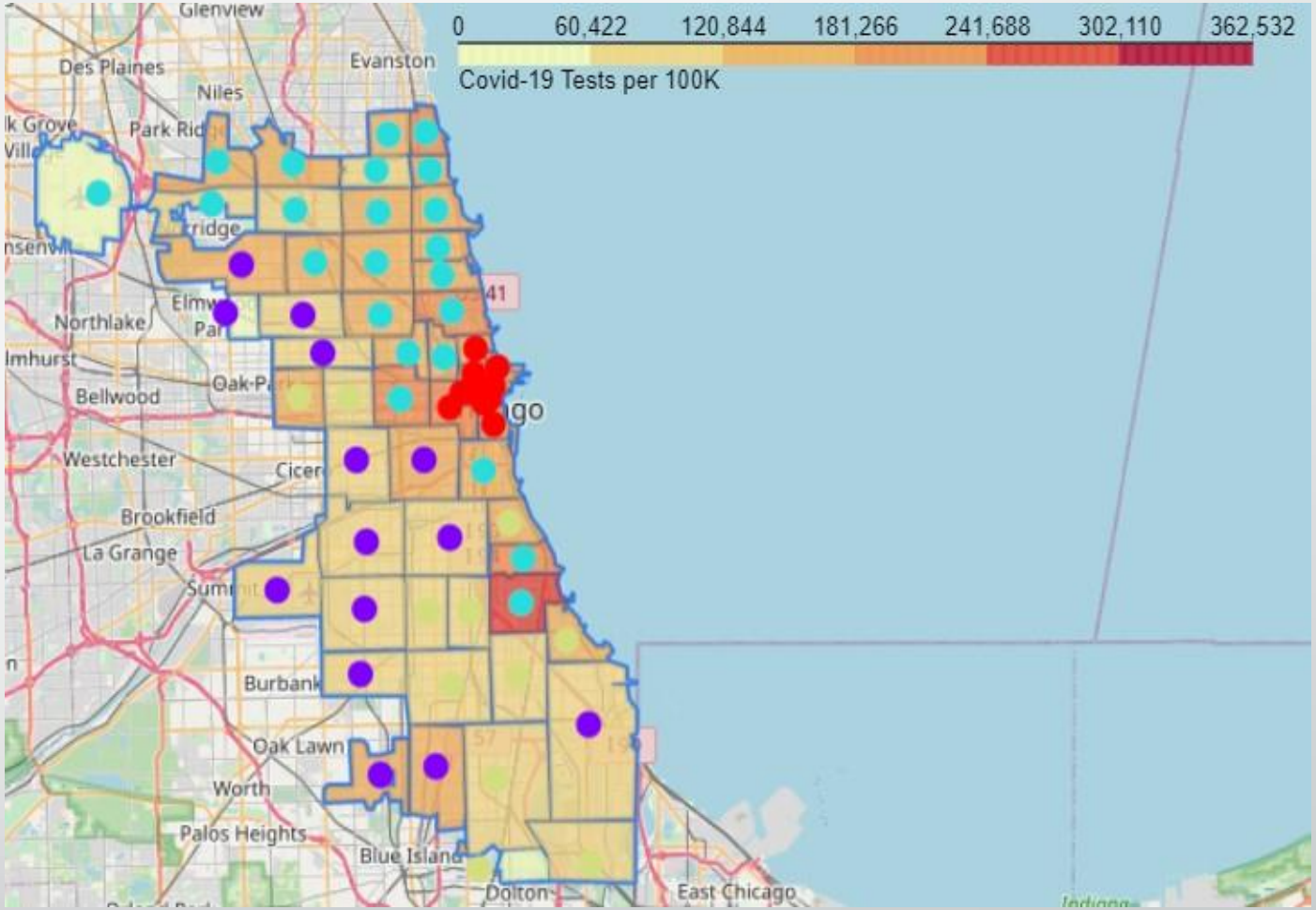
Deaths per 100K with 10 Highest Rates

- No apparent pattern besides not centrally located
- Like in previous slide different data may be needed to find a connection



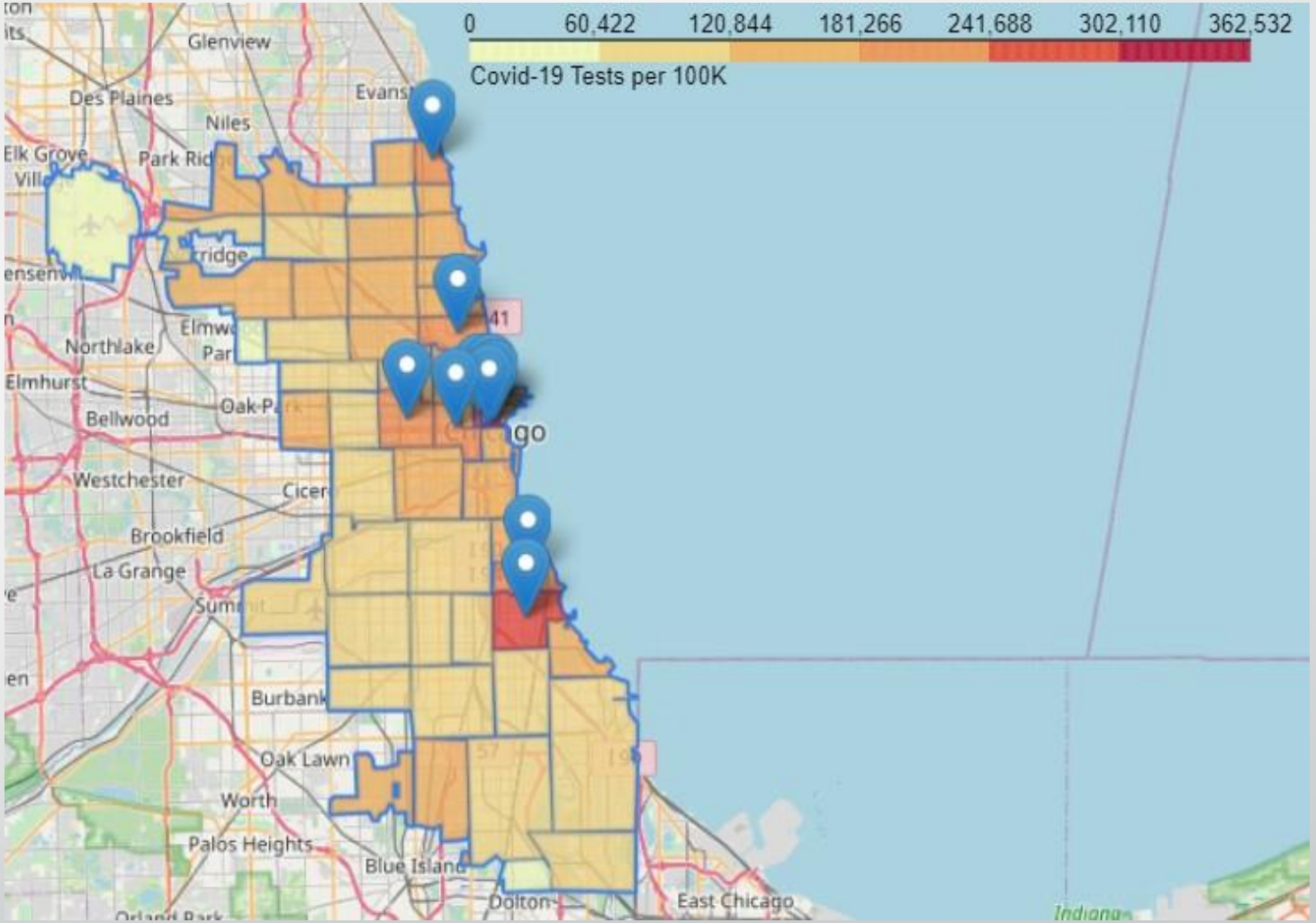
Tests per 100K with Clusters

- No apparent pattern in terms of testing distribution



Tests per 100K with 10 Highest Rates

- Concentrated centrally
- Outlier in the north and two to the south
- These areas may be the most accessible where other areas may not
- More of the population in these areas willing to test



Conclusion and Future Directions

- Clustering of businesses can help determine how similar areas are
- Comparing clusters to case rate shows clearly affected area in West side of city
- Other data would be needed to research further for death and test rates
- Maps with the clusters can help visualize where more resources are needed