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How Race and Income inequalities disproportionately affect COVID-19 Health Outcomes in Seattle, WA.

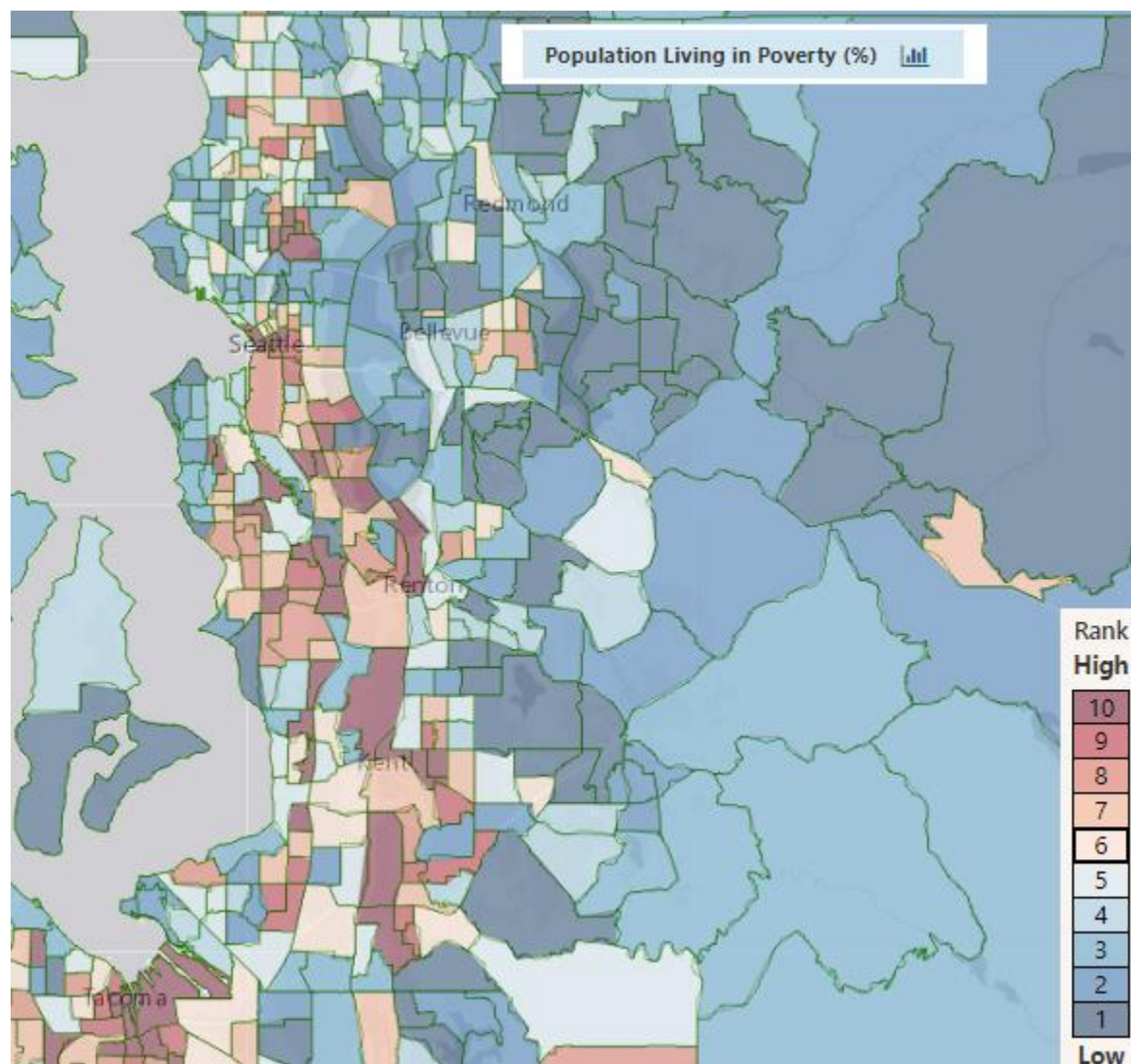
Introduction

In this Atlas, I have decided to discuss current discourse in regard to socioeconomic factors and the relevant data to make an argument that Race, and Income are significant variables that affect COVID-19 health outcomes. In specific, I want to develop theory on how the geographic inequalities of race and income is associated with systematic racism, and by extension associated with political epidemiology and COVID-19 health outcomes.

Redlining

A phenomenon in which the city of Seattle implemented discriminatory exclusion practices targeted against Black and Indigenous People of Color (BIPOC). Where banks, insurance companies, and other institutions refused or limited loans, mortgages, and insurance in specific neighborhoods (Frantilla, 2021).

Map 1: % of People Living in Poverty in Seattle



Redlining among other factors contributed to the income inequality displayed in my Map 1. In the context of politics, systematic racism has persisted through the inequitable policies targeted against BIPOC known as Redlining. Map 1 sets us up to understand how racism, and poverty should be viewed in the same context as health problems.

Description

Map 1 is a screenshot taken from the *Washington State Department of Health's* online Washington Tracking Network (WTN) service. It is a choropleth map that highlights populations that live under the poverty threshold. For clarification: the darker the red, the greater the percentage of people living under that threshold (higher levels of poverty). Areas that are lighter, and darker blue signify lesser percentage of people living under the poverty threshold—meaning that poverty levels are lower in these areas (richer).

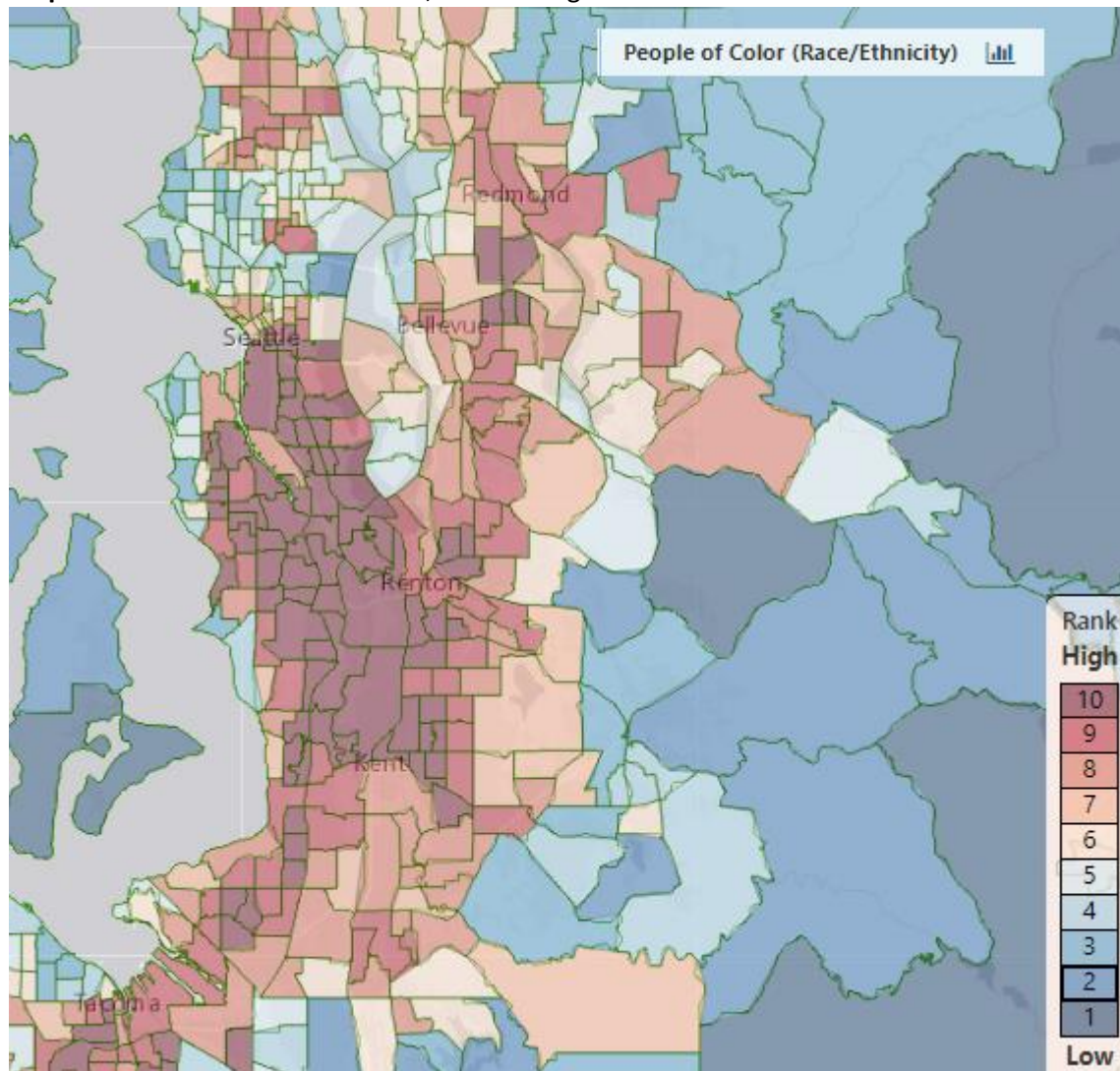
The Map clearly visualizes an income inequality where areas south of Seattle are of higher rank (higher poverty), and areas North of Seattle have considerably lower rank (less poverty, richer). This can be partly explained by Seattle's historic redlining. Thus, I hope to convey that in Seattle, race and income are closely related-- in that BIPOC on average are more likely to suffer from poverty related issues than other populations. This map sets us up to understand politically how systematic racism (such as redlining), and poverty (effect of redlining) should be viewed in the same lens as health problems, such as accessibility to COVID-19 resources.

Data

The data used for this map comes from Census data collected by the American Community Survey (ACS). The Census Bureau conceptualizes poverty by determining if a family's household income is lesser than the Poverty threshold (\$31,661, calculated by Census). I can trust this map and the data it is comprised of, as it comes from a reliable data source such as the Census Bureau.

URL: <https://fortress.wa.gov/doh/wtn/WTNIBL/>

Map 2: Race Distribution in Seattle, who's being affected?



Description

Map 2 is also a screenshot taken from the *Washington State Department of Health's* online Washington Tracking Network (WTN) service. It is a choropleth map that uses a gradual color ramp of two colors to displays the distribution of people of color throughout Seattle. Areas in dark red signify high concentrations of People of Color, whereas areas lighter and bluer in color signify concentrations of White people.

Data

In this dataset, People of Color are: Black, American Indian/Alaskan Native, Asian, Native Hawaiian-Other Pacific Islander, Spanish/Hispanic/Latino. The data for People of Color is derived from the *Washington State Office of Financial Management (OFM)*. They used a mathematical model consisting of births, deaths, and migration to make forecasts based on numbers obtained from the Census Bureau.

We can trust this dataset and map visualization, as it comes from a trustworthy source, furthermore the data used was from the Census Bureau.

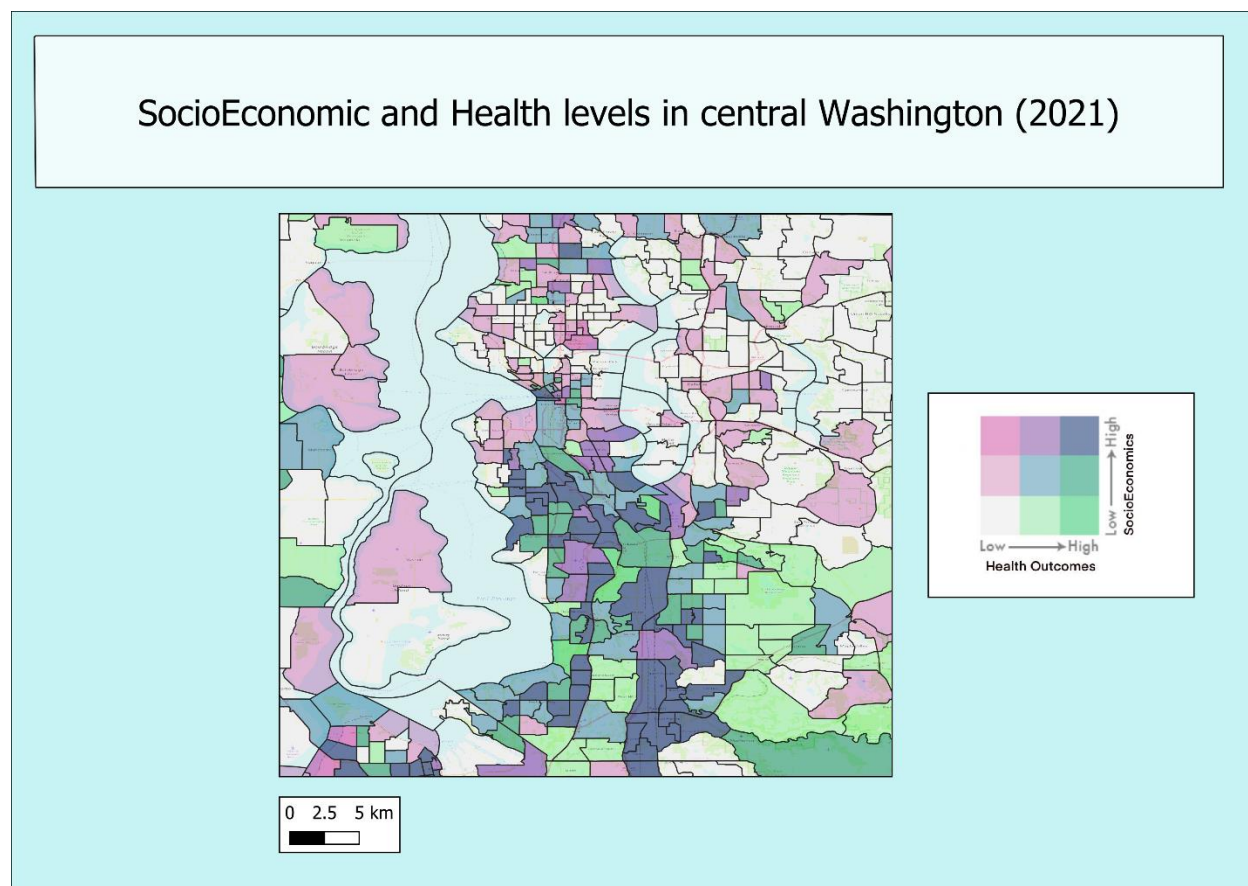
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Discussion

In my first map, I have been suggesting that income is closely associated with race, and that in Seattle, there's an unmistakable income inequality (supported by Map 1) where people south of Seattle are significantly more affected by poverty than people north of Seattle. The next step is to contextualize exactly who is living in these areas of poverty. In my Map 2, we can observe an even more apparent discrepancy in race/ethnicity distribution. People of Color are heavily concentrated south of Seattle, and White people are notably condensed north of Seattle. Notice the sudden change in color near the downtown Seattle region.

As I have mentioned before, systematic racism persists through the aftereffects of redlining. With the two maps showed so far, I hope to connect the idea of income and race as a significant factor in accessibility to proper healthcare in relation to COVID-19. Proper healthcare can mean various things, in the context of COVID-19, I will argue that proper healthcare consists of accessibility to consistent trustworthy information. How this relates to race and income is that in these areas of poverty—typically minorities, “people of color have much more limited access to health care providers and trusted information. The inability to talk one-on-one with a provider can lead people to look for other sources of information that are inaccurate, misleading, and even dangerous. One mistaken belief and or bad encounter with a provider can have a lasting impact on how entire generations either trust or distrust medical professionals” (Schellinger, 2021). Whilst this is a bold assumption and generalization of a population, it is worthwhile to discuss as it can have real implications. It serves as evidence that systematic racism is a significant factor in understanding health problems, as health is often associated with wealth, and by extension race. Thus, I hope it is evidently clear that poverty, racism, and health are all interconnected.

Map 3: How Socioeconomics relate to Health outcomes.



Description

Map 3 is a bivariate choropleth map that I made that utilizes two variables to make an argument about how Socioeconomics is correlated with health outcomes. To clarify the legend, if areas are of “higher” rank, this means that this area is more susceptible to suffer from either health-related issues, or socioeconomic issues. For example, areas south of Seattle are typically dark blue or green. The dark blue suggests that these areas suffer from socioeconomic problems such as: unemployment, poverty, no high school diploma. The dark blue signifies that these areas are likely to suffer from high levels of socioeconomic issues in addition to the health issues listed below.

On the contrast, areas north of Seattle are generally pink or white. White shaded areas means that these areas are less likely to suffer from health-related issues such as: cancer, death from cardiovascular disease, lack of health insurance, premature death. However, areas that are pink are more likely to suffer from socioeconomic problems but not health problems.

The use of a bivariate choropleth map enables the reader to draw a conclusion on two variables rather than just one typically. In my map, you can make an argument about an area’s susceptibility to health-related issues, or socioeconomic issues, *or* it can be the combination of the two. This is a powerful tool

that shows a geographical relationship between two phenomena, as it provides insight beyond what a univariate map could do.

Data

Map 3 utilized data that had been already operationalized as Socioeconomic outcomes, and Health outcomes. Meaning, these variables are the combination of many other smaller variables. For instance, Health outcomes is conceptualized as the combination of: BMI, Cancer Deaths, Death from Cardiovascular Disease, Premature Death, and Population 19-64 with no Health Insurance.

Socioeconomic outcomes are conceptualized as the combination of: No access to private vehicle %, No High School Diploma %, Population Living in Poverty %, and % Unemployed.

Most of the data is collected from the Census Bureau, with a handful coming from other sources such as the *Washington State Department of Health*. I can trust this map and the data, as I overlooked the metadata including the data collection process, and I can verify the integrity of the data.

URL: <https://fortress.wa.gov/doh/wtn/WTNIBL/>

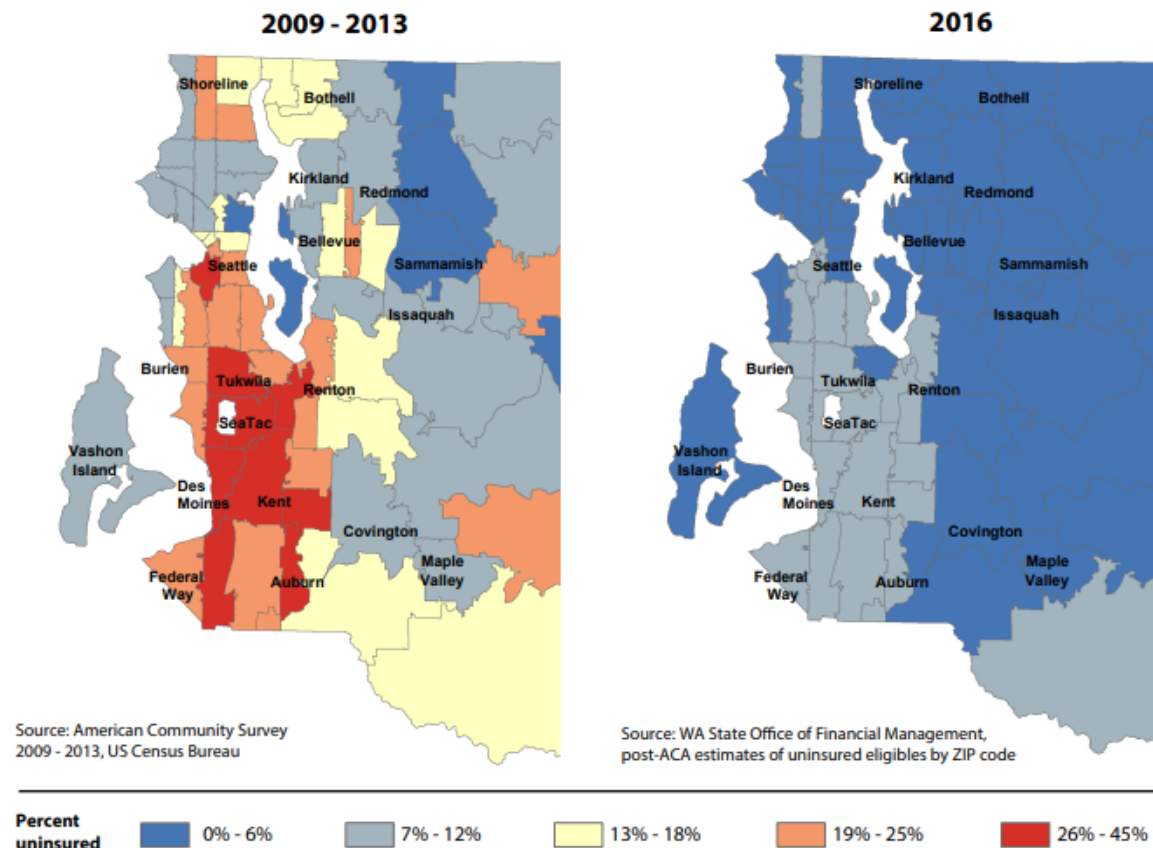
Discussion

In Map1 and Map2, I provided evidence that supports the argument that race and income being deeply connected-- especially in Seattle. My purpose with Map3 is to further support this argument and contribute to the conversation of political epidemiology in that race and income are among the variables that make up socioeconomic outcomes and by extension, health outcomes.

Map 4: Healthcare in the scope of Accessibility.

Before and after the Affordable Care Act:

Uninsured adults age 18-64 by ZIP code in King County, Washington



Description

Map 4 is a descriptive map that makes an argument using time. On the left, we can see the city of Seattle from 2009 - 2013. We can observe a similar pattern to the maps I have showed previously in which areas south of Seattle are disproportionately affected by said phenomenon in comparison to areas north of Seattle. It should be clear by now that there is an undeniable geographic inequality in the city of Seattle.

Both maps are choropleth maps that share the same classification. On the left, we see that in areas south of Seattle, the percentage of people uninsured are greater than in areas north of Seattle (this could relate to socioeconomic factors). However, on the right is a map of the same phenomenon, but in 2016; approximately three years later. We can see that there is little variance in this second map, as the map only displays two colors as opposed to the map on the left with four. Due to the fact the map utilizes percentages, it is justifiable to say that this is a good use of choropleth maps to make an argument over time. Essentially, I'm gathering that BIPOC could not afford health insurance until the

Affordable Care Act, this is evident by the 2016 map on the right where it shows the same areas at significantly higher percentages of insurance.

Data

Map 4 was found from a report published by the Community Health Needs Assessment (CHNA) program, on the kingcounty.gov website. This report was a collaborative project from 10 hospitals and health systems in Seattle & King County, in this report, they discuss the community health needs of King County and the Affordable Care act. We can see in the map itself that the data used to create both maps are from reliable sources.

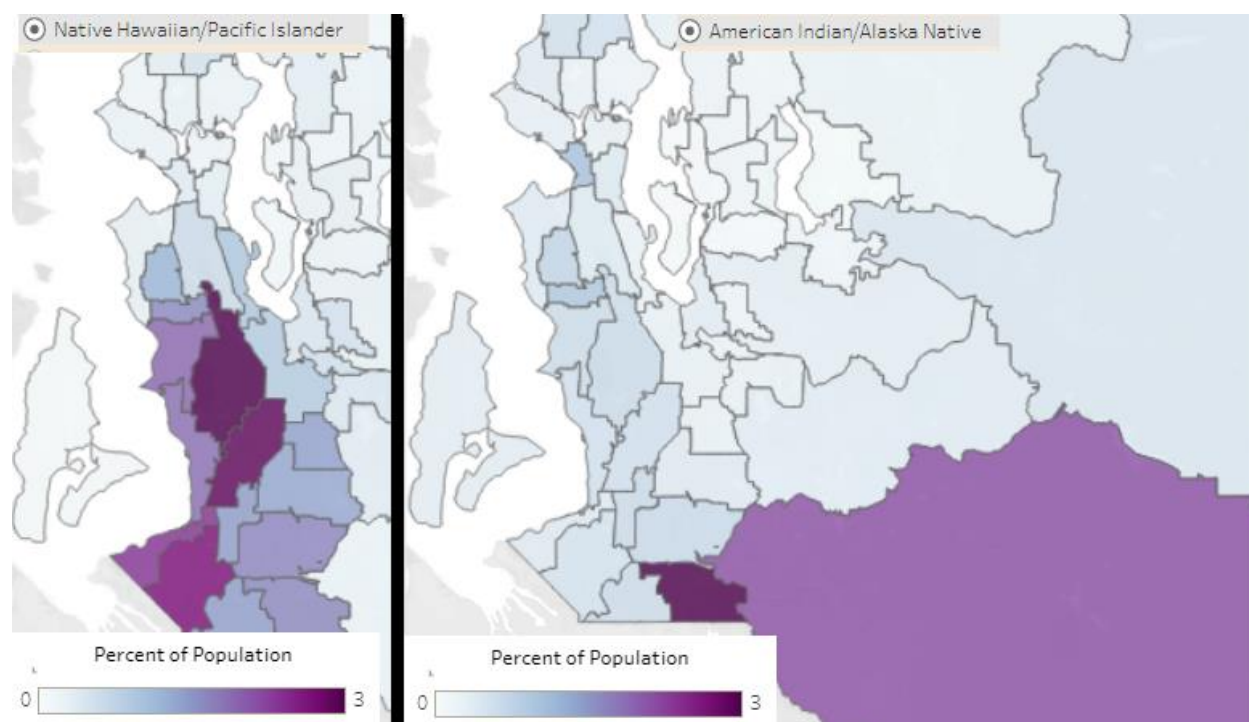
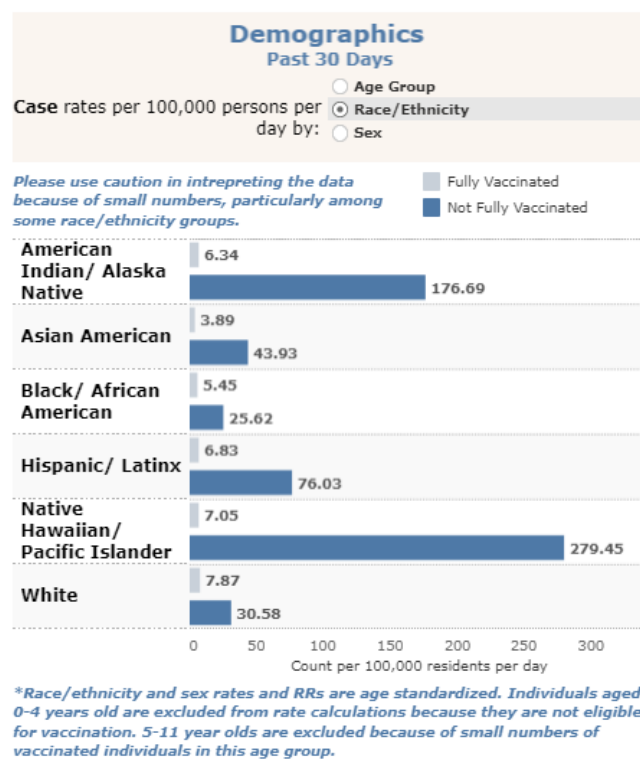
On the left, the data is from the US Census Bureau. On the right, the data is from the WA State Office of Financial Management. These are both reputable and reliable sources of government information, therefore I trust the author and data collection processes that make up this map.

Discussion

Another example of how socioeconomic factors such as race and income affect health outcomes is made evident in map 4. More specifically, I wanted to use this map to serve as direct evidence that race and income inequalities indeed affect health outcomes and by extension, COVID 19 health outcomes. Something as intrinsic as health insurance is not made accessible to the entire population, neglecting communities of color due to lack of affordability. This map serves to support the argument that race inequalities have a direct effect on the disproportionate distribution of health insurance.

Considering 2009-2013 was not long ago, it is even more clear that the social and geographic inequalities caused by redlining and other factors still have consequences today. In 2013, it was the affordability of health care that was the limiting factor. In 2019-2021, it is the same concept, but instead, it is the accessibility to proper health procedures regarding COVID-19 as the limiting factor.

Map 5: Case Example of geographic inequalities affecting COVID-19 Outcomes.



Description

These are two choropleth maps that visualize two different populations. On the left, we have the distribution of the Native Hawaiian/Pacific Islander population. On the right, we have the distribution of the American Indian/ Alaska Native population. Above the two maps is a table, where it displays COVID-19 health outcomes. We can observe that for some reason, the American Indian/ Alaska Natives, and Native Hawaiian/Pacific Islander population is disproportionately gaining COVID-19 cases in comparison to other races. American Indian/ Alaska Native have 176.69 non fully vaccinated cases per day, and Native Hawaiian/Pacific Islander have 279.45 non fully vaccinated cases per day.

Data

The table was found from kingcounty.gov on a page called “*Covid-19 Outcomes by Vaccination Status*”, and the data used to create the table comes from the Washington Department of Health.

The two maps are from the “*COVID-19 Vulnerable Communities Data Tool*”, where you can input different filters to show various information regarding COVID-19 and how they affect different communities. The data used specifically for my two maps were collected from the American Community Survey (ACS), United States Census Bureau, and the Washington State Department of Health.

Both the table and maps are reliable sources of information and data. I followed the metadata and links to find these data sources.

Discussion and Conclusion

In Map 1 and Map 2, I made an argument that race and income are deeply connected. Furthermore, the implications of these inequalities such as racism, and poverty should be viewed as health outcomes as these inequalities have a direct effect on socioeconomic outcomes (Map3), and health outcomes (Map 3, and Map 4).

The chronological order of the maps I presented were on purpose. In Maps 1 and 2, I made a claim that race and income are interconnected, and that they should be viewed in a similar scope. People of Color are more likely to live in areas of high poverty, whereas White people are more likely to live in areas of low poverty. This relates to politics in that the redlining policy systematically targeted BIPOC, creating an unjust inequality socially, and geographically.

In map 3, I tried to operationalize this argument/theory by combining multiple variables that are typically associated with one another to make another argument that it is the combination of race, income, and other socioeconomic factors that influence health outcomes. This relates to political epidemiology because it is the social inequalities that cause some races to be more susceptible to negative health outcomes than others. We saw in map 4 that health insurance had an unfair distribution in 2014, but once it was made accessible—addressing the limiting issue of income inequality, the distribution of health care became fairly stabilized and normal.

My intention with Map 5 is to summarize all the theory that I have been creating thus far, showcasing that the Native Indian and Native Hawaiian population, who live in the areas of poverty, are being affected by COVID-19 at a higher rate than other races. Which is very interesting, considering how little they make of the population, the case number per 100,000 is significantly high in these populations. In

conclusion, it is the interconnection of race, income, and other socioeconomic factors that directly affect the accessibility to proper health care procedures regarding COVID-19.

Works Cited

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