Revealing Vulnerability to COVID-19 in Urban American Indian and Alaska Native Communities

Category: Research
written by NCUIH | August 2, 2021

Urban Native communities exist and thrive across this country, with 38 areas served by an Urban Indian Organization (UIO). These UIOs have been an indispensable source of culturally competent care to these communities during the COVID-19 pandemic as you can see in our previous post: Visualizing COVID-19: A Year in Urban Indian Organization Service Areas.

However, a lack of COVID-19 statistics continue to obscure the full burden that UIOs wrestle with. We know that cities are affected by COVID-19, but how are AI/AN communities affected within these cities? A single count of cases across a county assumes that the extent of the pandemic is uniform within the county, but we know that's not the case. Especially in urban areas, neighborhoods and communities wildly vary in terms of resources, systemic deprivation, and the ability to resist natural disasters such as a pandemic.

Resilience and vulnerability to natural disasters can be illustrated using the Social Vulnerability Index (SVI), a metric developed by the CDC and the Agency of Toxic Substances and Disease Registry. The SVI has been utilized for research in racial and geographic disparities in COVID-19 response, such as in Alabama, Los Angeles, and Louisiana and has also been used as a reference resource by public health departments. Research has shown that historically marginalized communities tend to live in areas of higher vulnerability, and areas of high SVI also have seen the most COVID-19 cases and deaths. Put together, this means that the full extent of the COVID-19 pandemic for the Urban AI/AN populations is not reflected in public county-level COVID-19 statistics.

IS EVERYONE EQUALLY VULNERABLE WITHIN A CITY?

Public health statisticians too often overlook urban AI/AN communities . And while AI/AN communities are often proportionately small when compared to the total population of the cities in which they live, great lessons can be learned from including them in analysis. AI/AN people do not live in an evenly dispersed pattern in most cities. In fact, in many cities, they live concentrated in areas of disproportionately high social vulnerability, compared to the white population in the same city. This makes the presence of UIOs even more crucial, as they deliver life-saving services to areas of the highest need.

Urban AI/AN populations are more clustered in higher SVI census tracts than the white population in 30 out of 38 UIO service areas. Further, in tracts that are extremely vulnerable – defined here as the top 10% most vulnerable tracts nationally – the concentration of AI/AN people is at least twice that of the local white population in 18 service areas.

In the link below you will find an interactive map showing all 38 UIO service areas with information about the COVID-19 pandemic, the Urban AI/AN population, and the social vulnerability in each city. You can navigate this map by clicking on the black outline of any service areas to zoom in on summary statistics. Each map and chart can be magnified further by clicking on it. You can return to the main map by moving your cursor to the far right and clicking the home button or

return to the prior page by clicking the arrow. You will also see a button on the main map with a glossary showing explaining all our methods and data sources used for this analysis. Images may take a few moments to load.

Clicking on a service area, the tool shows

1. The county's COVID-19 case and death count, illustrating that available COVID-19 statistics are coarse and uninformative for an urban setting.
2. The urban AI/AN population is not equally spread across the service area.
3. Service areas and the neighborhoods within them vary in their level of vulnerability. In many service areas the AI/AN population is more concentrated in areas that are more vulnerable to COVID-19.

These three points are illustrated in the red, green, and blue maps on each of the service area info-cards.

After selecting a service area, click the "SVI Graphics" button on the lower right and you will be navigated to statistics and visualizations about the relationship between SVI and service areas AI/AN population. Nearly all service areas show that more of the urban AI/AN population live in the most vulnerable tracts in their cities (Figure D). Equally, in many UIO service areas, fewer AI/AN people live in the most resilient areas compared to the white population, forming a downwards-sloping distribution curve (Figure E). In the most vulnerable areas, the ratio of AI/AN population to the same city's white population is often high, representing the disproportionate vulnerability to disasters such as the pandemic (Figure F).

As an example of reading the figures and statistics, let us look at the Minneapolis/Saint Paul service area. As of April 14th, 2021, the area had 161,171 COVID-19 cases and 2,522 COVID-19 deaths cumulatively since the start of data collection (Figure A). These statistics are reported at the county level for Hennepin and Ramsey counties. But the Urban AI/AN community is not equally distributed across these counties (Figure B). The Twin cities are wildly unequal in terms of community resources. Census tracts in the Minneapolis/Saint Paul service area range from among the most resilient in the country to the top 1% most vulnerable in the country. The Urban AI/AN population tends to live in the more vulnerable tracts in this city (Figure C). Clicking on the "SVI Graphics" button will take you to an analysis showing the association between AI/AN-race and SVI in the Twin Cities. In this Metropolitan area there are 51 tracts that are in the top 10% most vulnerable in the nation. 21.7% of the local urban AI/AN population live in these most vulnerable tracts. Meanwhile only 4.5% of the city's white population lives in those vulnerable tracts (Figure D). Figure E groups the census tracts into blocks of five, each approximately 1% of the service area, and orders them by their vulnerability. It then plots the percentage of the white and AI/AN populations that live in these tracts. You can see along the entire continuum of vulnerability in the Twin Cities, the AI/AN population is more likely to live in high-SVI neighborhoods and less likely to live in low-SVI areas than the white population. Figure F shows the magnitude of this problem by measuring the ratio the concentration of AI/AN and white residents in areas of differing SVI. At some points (the 50 most vulnerable tracts) the AI/AN population is more than five times as concentrated in these areas than the white population. Taken as a whole, these figures act as a corrective to county-level data, revealing a level of vulnerability to the virus that is not reflected in COVID-19 statistics.

Figure A: Map of Minneapolis/St Paul area showing cumulative COVID-19 cases

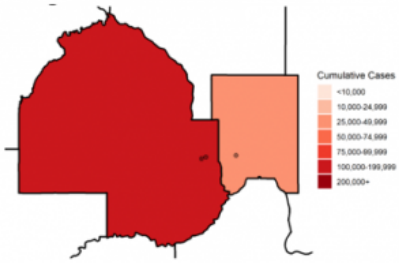


Figure B: Map of Minneapolis/St Paul area showing distribution of Urban AI/AN alone or in combination with other races

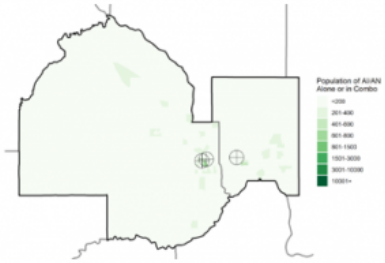


Figure C: Map of the Minneapolis/St Paul service area indicating areas of high social vulnerability

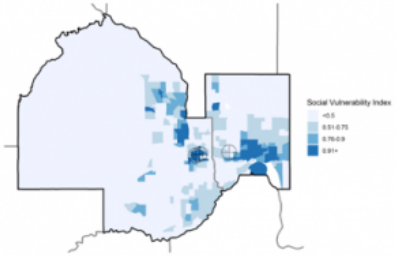


Figure D: Cumulative Racial Proportion by tracts ordered from Highest vulnerability to lowest vulnerability

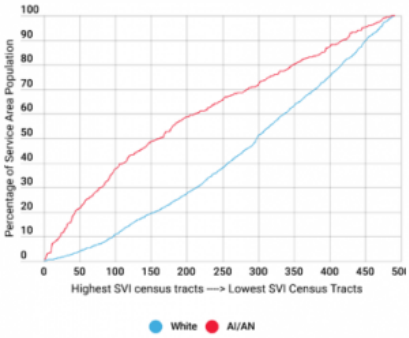


Figure E: Racial proportion by grouped blocks of census tracts

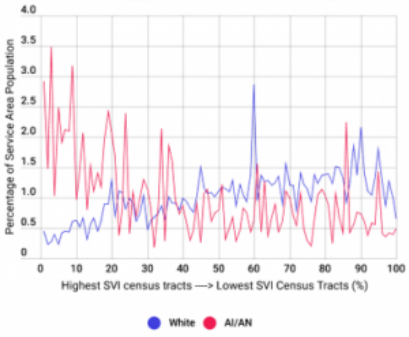
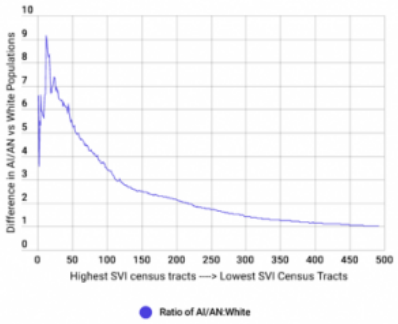


Figure F: Cumulative Ratio concentration of Urban AI/AN to White population



CONCLUSIONS

In many urban areas, AI/AN people face additional vulnerability to the pandemic (and other disasters) simply because of where they live. This compounds with the other challenges we know they face. Explore the interactive map in other areas to see that this relationship holds across the country. Relying on one county-level number for cases and deaths during to the pandemic effectively masks the vulnerabilities that AI/AN community's face within those counties.

Yet, due to a lack of accurate racial data on cases and deaths, county-level data is often the only thing key stakeholders see. It is more important than ever to push for accurate and reliable statistics for COVID-19 cases and deaths, particularly for racial minorities. Efforts have already been made to collect and publish better statistics showing racial breakdown of COVID-19 cases and deaths. Urban AI/AN communities need to ensure that they too are being counted. Ensuring that more specific geographic and racial COVID-19 data is in the hands of those who rightfully own and can effectively utilize it is crucial to alleviate the burden faced by Urban AI/AN people. As we have shown, even a proportionally "small population" can face a massively disproportionate burden in their home cities. This problem should be revealed and treated as a priority.

By Alexander Zeymo & Andrew Kalweit, posted on Monday August 2, 2021

This post is supported by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award (NOFO OT18-1802, titled Strengthen Public Health Systems and Services through National Partnerships to Improve and Protect the Nation's Health) funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by CDC/HHS, or the U.S. Government.