COVID-19 Infection Rates in Minority Communities

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Abstract

The COVID-19 Pandemic has disproportionately affected people and communities of color, bringing to light inequities that exist in our healthcare system. Due to the various social determinants of health, including housing status, education, occupation, and access to medical care, underserved communities are further burdened with high infection and mortality rates. In this project, a COVID-19 tracking database was analyzed to determine the effect of the virus on minority groups in California. Although Latinos are no longer the minority in the population, they experience specific cultural and socioeconomic phenomena that seem to increase their risk for COVID-related illness.

COVID-19 Infection Rates in Minority Communities

The first case of community spread of COVID-19 in California was identified on February 19, 2020 (Kaiser Health Network, 2020), and since, Americans have had to endure the extreme medical, economic, and emotional hardship brought on by this Pandemic. While healthcare workers and public health agencies struggle to gain a semblance of control over the outbreak, preexisting inequities in our healthcare system have imparted undue burden on underserved minority communities. While African American and Hispanic communities continue to report disproportionately high incidence and mortality rates (Somvichian-Clausen, 2020), public health agencies like the Centers for Disease Control and Prevention (CDC) must act quickly to reduce the immense suffering in our most vulnerable communities.

The CDC (2020a) identified key socioeconomic factors that place minority communities at higher risk for COVID-19 infection, including barriers to healthcare access, gaps in education and income, occupation, discrimination, and housing: although minority communities exhibit higher levels of preexisting conditions that increase their risk for severe COVID-related illness, these social determinants of health are directly linked to the poor outcomes seen in many patients of color. Furthermore, Artiga et al. (2020) note that many minority patients work in essential industries that place them in close contact with people from all walks of life, increasing the risk for viral transmission. According to Podewils et al. (2020), specific cultural factors like strong community ties further increases the risk of severe illness or death.

Given the ever-increasing daily COVID-19 case counts, media reports of hard-hit communities around the country, and the specific struggles faced by individuals in low-SES communities, data regarding COVID-19 infection and mortality is imperative to analyze and understand the effects of race and equity on positive health outcomes.

Results

The database named, “COVID-19 Cases - Ethnicity Demographics," was downloaded from the California Open Data Portal (2020). This database tabulates the cumulative number of COVID-related cases and deaths, for each racial/ethnic group, daily.

The database contained a total of 1,679 entries, tallying the number and percentages of new cases or deaths reported for eight designated races/ethnicities, on a given day. The races/ethnicities in this database were defined as American Indian or Alaska Native, Asian, Black, Latino, Multi-Race, Native Hawaiian or Pacific Islander, Other, or White. The database accounts for a total of 693,495 COVID-19 Cases and 17,856 Deaths.

Due to the cumulative nature of the data, significant data manipulation was required to identify only the new cases or deaths, which were tabulated biweekly, see Figures 1 and 2. The incidence graphs show a surge in COVID-19 infections, beginning in June and peaking in late July, with over 80,000 new infections reported in just two weeks. A surge in COVID-related deaths followed shortly thereafter, peaking in late August with almost 2,000 lives lost in the span of two weeks.

Using this information, the percentage of new cases and deaths was calculated for each race/ethnicity, to determine the ethnic distribution of COVID-19 Cases and Deaths, see Figures 3, and 4. While Latinos make up ~39% of the state’s population, they held onto 63% of new cases and 48% of deaths. Given the number of new cases and deaths being reported each month, ethnicity percentages were also calculated biweekly and juxtaposed onto the incidence graphs, see Figures 5 and 6 to visualize how the percentage of cases/deaths held by each ethnic group changes from month to month. Although there was a surge in COVID-19 cases, during the summer, the percentage of Latino patients remained relatively constant from week to week.

Discussion

These findings would suggest that the Hispanic community in California has been disproportionately affected by the Pandemic. Even as the largest ethnic group in the state, Latinos are being infected with COVID-19 at alarming rates. Although they make up less than 40% of the population, almost half of COVID-related deaths and two-thirds of infections occur in Hispanic-Americans. In a study published in the CDC's *Morbidity and Mortality Weekly Report,* Hispanic-Americans living in Denver, CO were at increased risk for COVID-19 infection due to specific socio-economic and cultural phenomena: "Denver adults with COVID-19 who identified as Hispanic were more likely to be members of larger households, to have known exposure to persons with COVID-19, to work in essential industries, and to continue to work while ill…" (Podewils et al., 2020, p. 1814). The author specifically notes that Hispanic-Americans are overrepresented in industries like "agriculture, construction, health care, food services, and waste management," diminishing one's ability to maintain social distance or work from home. Given the challenges faced by these communities, the federal government must act to provide stimulus and support for marginalized communities that have been so deeply affected by COVID-19.

Interestingly, the rapid increase in COVID-19 cases began to occur after June 1, likely coinciding with Memorial Day Weekend and the traditional start of the summer season. New COVID-19 cases seem to have surged after the 4th of July holiday, as well, where infection rates continued to climb until August. Additionally, COVID-related deaths seem to spike approximately a few weeks after the initial wave of infections, with the WHO's Chief Scientist, Soumya Swaminathan noting that "mortality increases always lag behind increasing cases by a couple of weeks," (as cited in Nebehay & Miller, 2020). The CDC (2020b) reports that on average, the time between COVID-19 exposure and symptom onset is approximately 6 days. For the most-sick patients, once symptoms appear, the median time to death is approximately 2 weeks. Reporting the fatality, however, has a median time of 20 days, explaining why the death spike will generally come 3 to 6 weeks after a surge in COVID-19 cases.

Some peculiarities were noted with the data, particularly with the race/ethnicity listed as "Other." California's ethnic distribution lists "Other" as 0.00% of the population, yet 9% of COVID-19 Cases were listed under "Other," indicating that this designation is likely a placeholder for missing information rather than an ethnic identity.

When inequities become apparent, it falls on public officials to provide care and guidance while supporting policies that aim to improve access and fairness. As such, we recommend that the federal government adopt a policy of unification through community outreach and involvement. To build equity and trust with minority communities, the federal government should anticipate and help mitigate the hardships faced by those who cannot always stand up for themselves. Through public education and resource allocation, the federal government will be able to help reduce inequities in healthcare, all while promoting empathy and care among its citizens.

References

Artiga, S., Garfield, R., & Ortega, K. (2020, April 8). *Communities of Color at Higher Risk for Health and Economic Challenges due to COVID-19*. https://www.kff.org/coronavirus-covid-19/issue-brief/communities-of-color-at-higher-risk-for-health-and-economic-challenges-due-to-covid-19/?utm_campaign=KFF-2020-Uninsured.

Bernstein, S. (2020, July 23). *California Latinos contracting COVID-19 at three times rate of whites*. https://cn.reuters.com/article/instant-article/idUSKCN24T2UI.

California Open Data Portal. (2020, November 9). *COVID-19 Cases - Ethnicity Demographics.* https://data.ca.gov/dataset/590188d5-8545-4c93-a9a0-e230f0db7290/resource/7e477adb-d7ab-4d4b-a198-dc4c6dc634c9/download/case_demographics_ethnicity.csv.

Centers for Disease Control and Prevention, Podewils, L. J., Burket, T. L., Mettenbrink, C., Steiner, A., Seidel, A., … Wynia, R. H., Morbidity and Mortality Weekly Report (2020). https://www.cdc.gov/mmwr/volumes/69/wr/mm6948a3.htm.

Centers for Disease Control and Prevention. (2020a, July 24). *Health Equity Considerations and Racial and Ethnic Minority Groups*. https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html.

Despres, C. (2020, December 2). Update: Coronavirus Case Rates and Death Rates for Latinos in the United States. Salud America. https://salud-america.org/coronavirus-case-rates-and-death-rates-for-latinos-in-the-united-states/.

Kaiser Health News. (2020, February 28). *New California Coronavirus Case May Be First In U.S. Without A Link To Travel Abroad*. https://khn.org/morning-breakout/new-california-coronavirus-case-may-be-first-in-u-s-without-a-link-to-travel-abroad/.

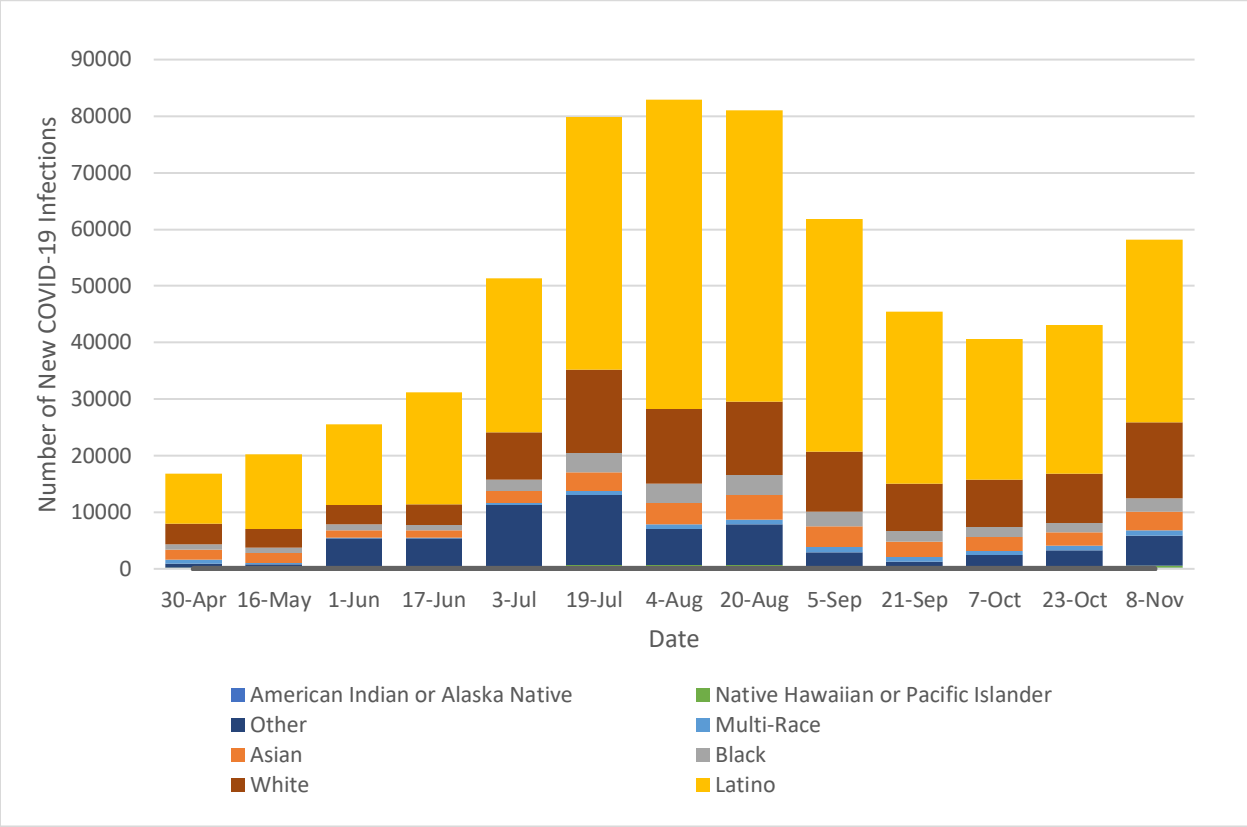
Somvichian-Clausen, A. (2020, August 5). *Latinos disproportionately affected by coronavirus, sheds a light onto existing inequities*. https://thehill.com/changing-america/respect/equality/510601-latinos-disproportionately-affected-by-coronavirus-sheds-a.

Nebehay, S., & Miller, J. (2020, October 14). WHO fears spike in deaths after global COVID-19 surge. https://www.reuters.com/article/us-health-coronavirus-who-cases/who-fears-spike-in-deaths-after-global-covid-19-surge-idUSKBN26Z2EY.

Somvichian-Clausen, A. (2020, August 5). Latinos disproportionately affected by coronavirus, sheds a light onto existing inequities. https://thehill.com/changing-america/respect/equality/510601-latinos-disproportionately-affected-by-coronavirus-sheds-a.

Figure 1:

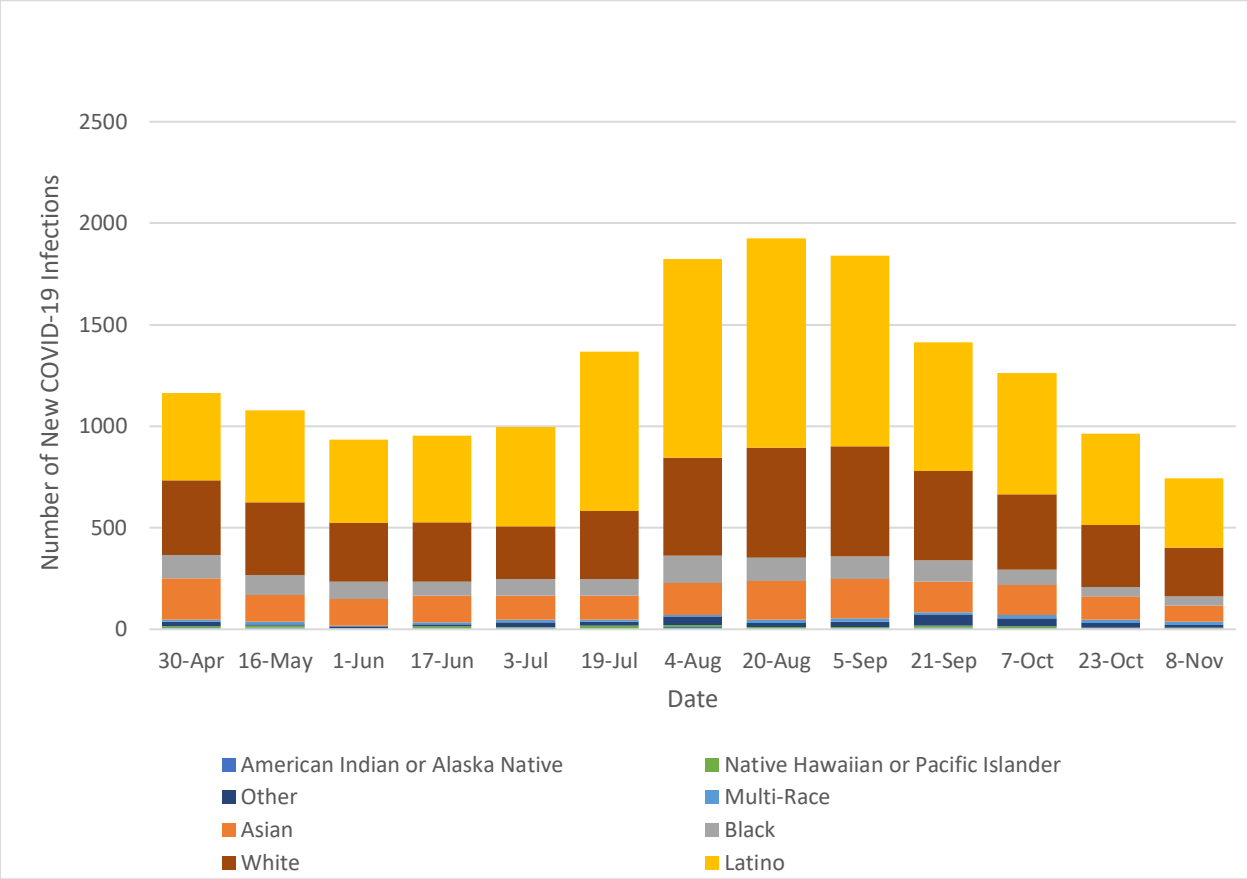
Biweekly COVID-19 Case Count in California (April – November 2020)



Note: This figure shows the incidence of COVID-19 by tabulating the total number of new infections, for each ethnicity, within a two-week period.

Figure 2:

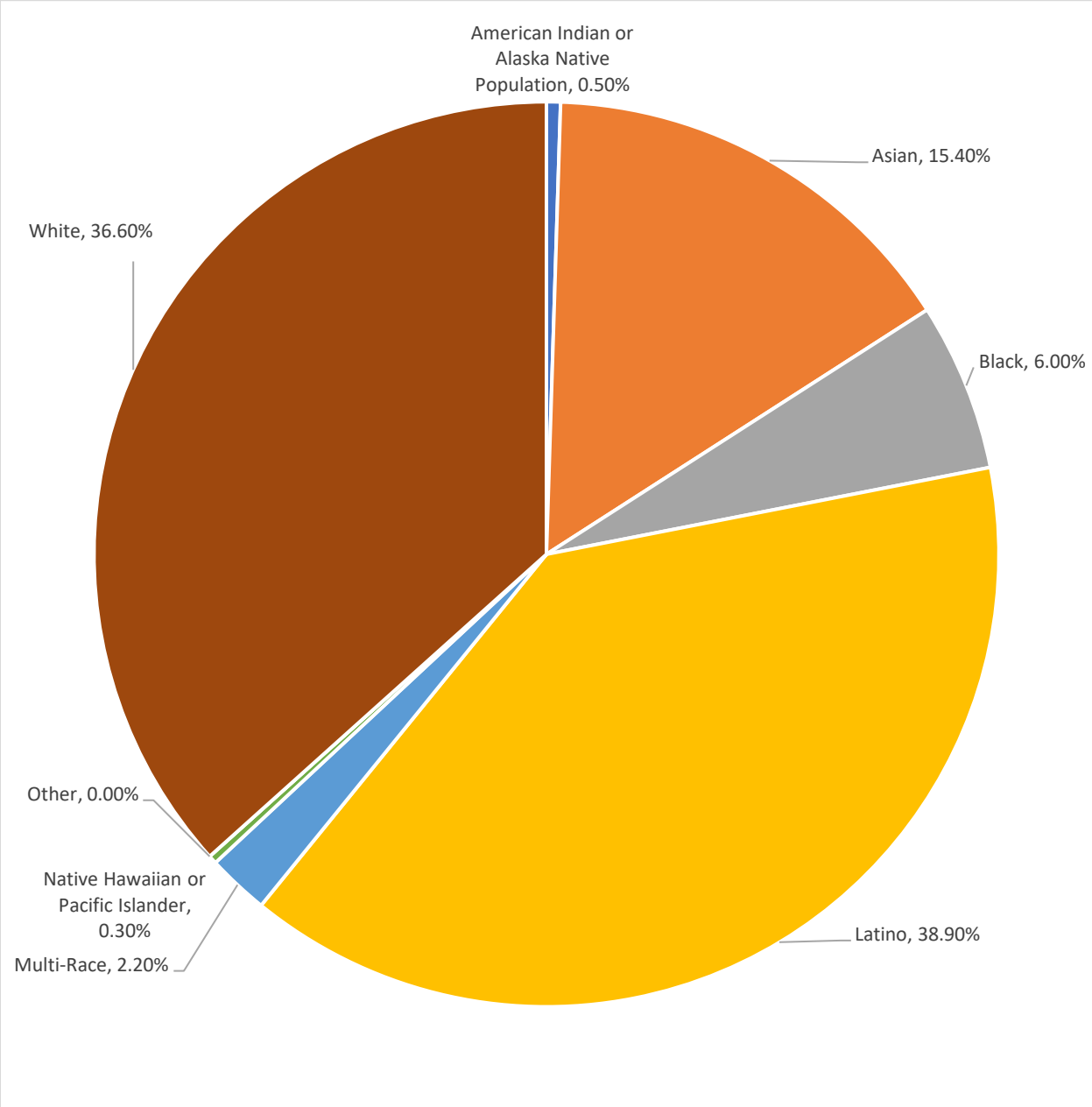
Biweekly COVID-19 Death Count in California (April – November 2020)



Note: This figure shows the mortality rate of COVID-19 by tabulating the total number of deaths, for each ethnicity, within a two-week period.

Figure 3

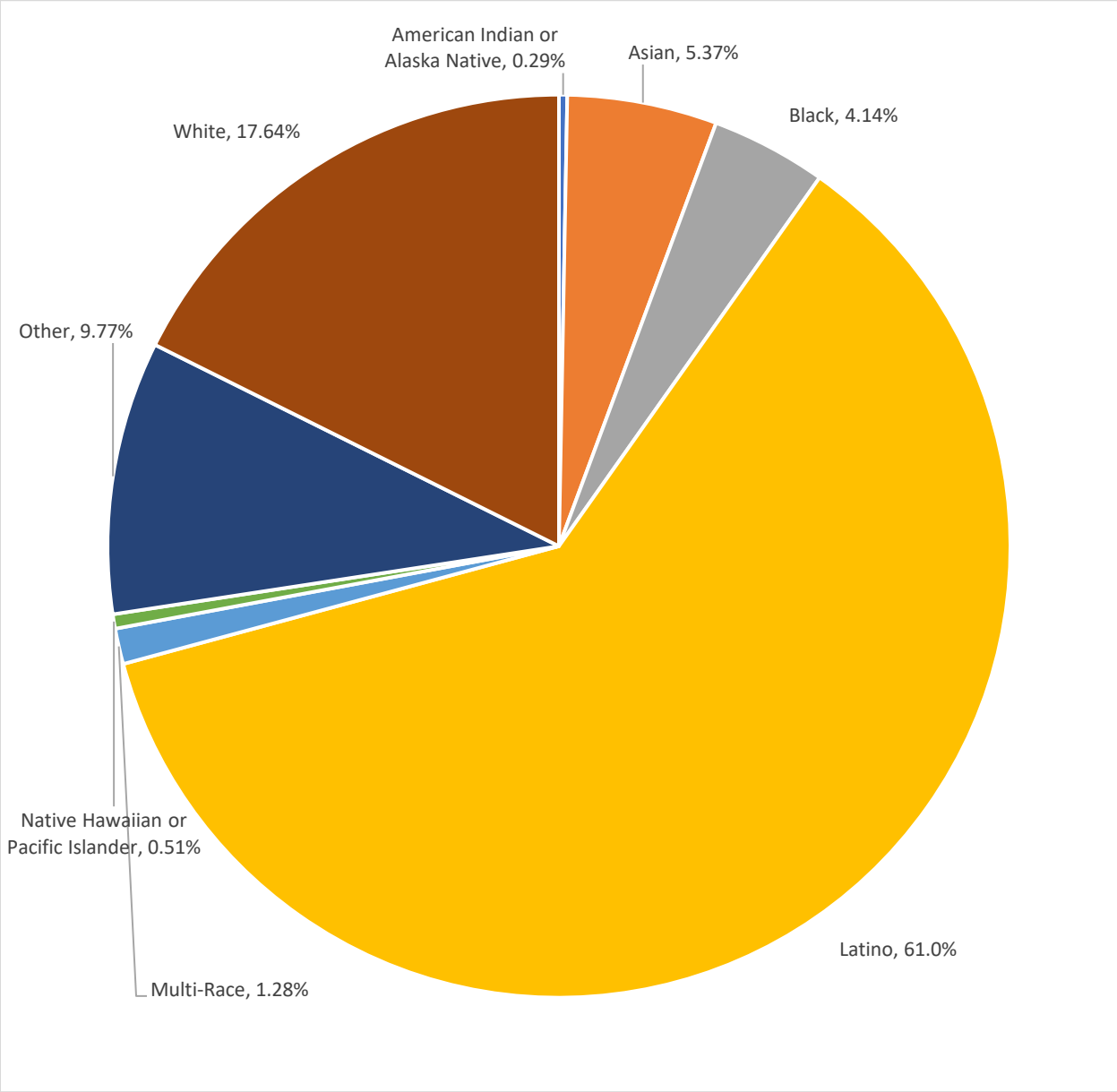
Ethnic Distribution of California (April – November 2020)



Note: This figure represents the ethnic makeup of California, with Latinos at 39%, Whites at 37%, Asians at 15%, Blacks at 6%, Multi Race at 2%, Others at < 1%

Figure 4:

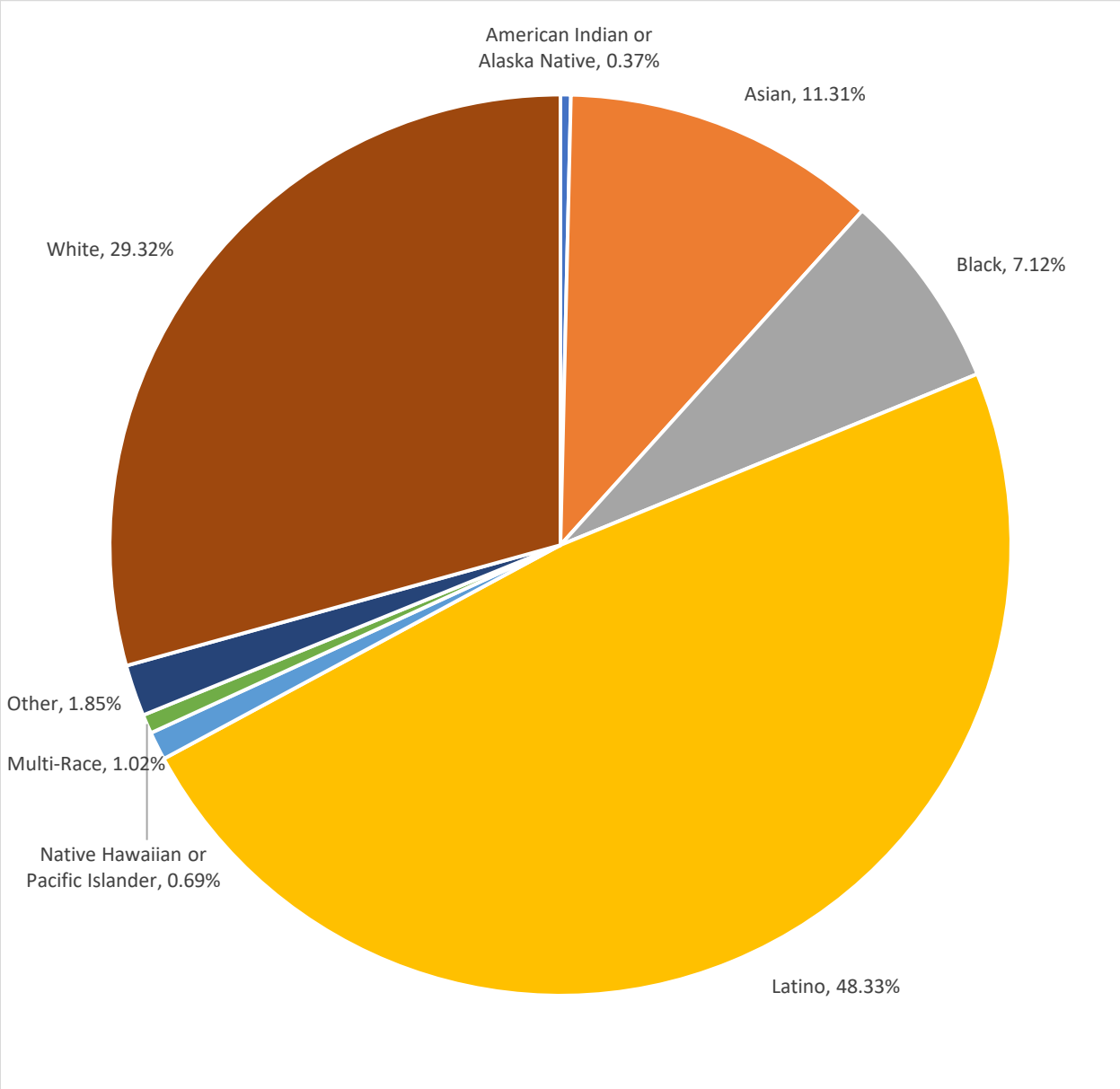
Ethnic Distribution of COVID-19 Cases in California (April – November 2020)



Note: This figure shows the ethnic makeup of all COVID cases in California. Latinos hold the lead at 61%, followed by Whites at 17%, Other at 9%, Asian at 5%, Black at 4.30%

Figure 5

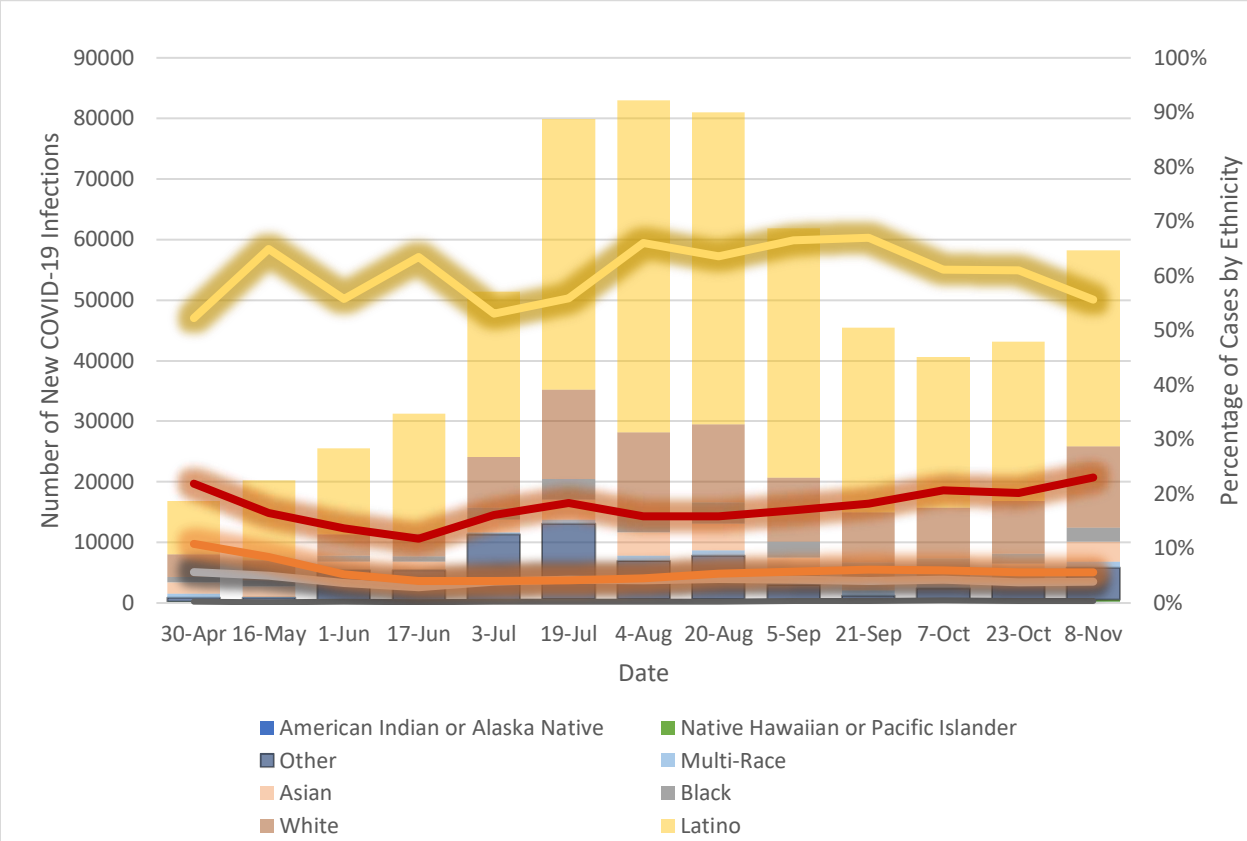
Ethnic Distribution of COVID-19 Deaths in California (April – November 2020)



Note: This figure shows the ethnic makeup of all COVID cases in California. Latinos hold the lead at 48%, followed by Whites at 17%, Other at 9%, Asian at 5%, Black at 4:30%, and others

Figure 6

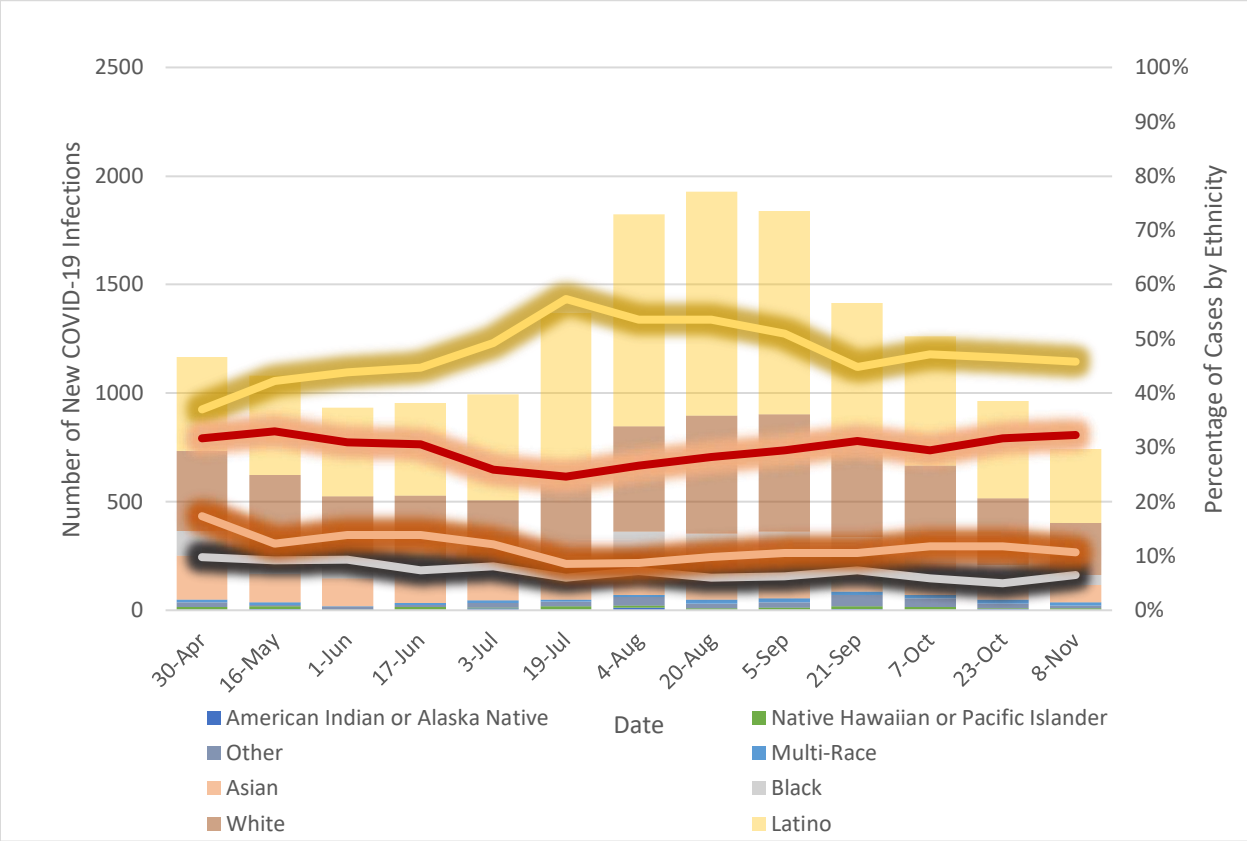
Percentage of Cases by Ethnicity, Measured Biweekly



Note: This figure combines a stacked bar graph with a line graph to show that even as the number of patients increases, the proportion of Latinos to other ethnic groups remain similar.

Figure 7

Percentage of deaths, Measured Biweekly



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