

Title: Assessing the Impact of Equity-focused COVID-19 Vaccination Distribution on Racial and Ethnic Health Disparities in Marin County, CA

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Background: During the early COVID-19 pandemic, the Marin County Epidemiology Team identified a sustained and disproportionate burden of COVID-19 on socioeconomically disadvantaged and minority groups. As of December 31 2021, 97%, 93% and 72% of Hispanic/Latino, Non-Hispanic White (NHW), and Black/African-American residents in Marin county received at least one dose of the COVID-19 vaccine, respectively. To understand changing COVID-19 patterns throughout the pandemic and the effectiveness of targeted vaccination outreach, we compared outcomes between pre-vaccination (March - December 2020) and post-vaccination (January - December 2021) periods by race/ethnicity.

Methods: We used California Department of Public Health Snapshot data for case and testing data, Marin County's local COVID-19 data management system for hospitalization and death data, California Department of Finance for population data, and data from the California Immunization Registry for vaccination status. We calculated the proportions of COVID-19 test positivity, hospitalization and deaths by race/ethnicity pre- and post-vaccination. We used risk ratios to compare the likelihood of developing COVID-19 outcomes between the two time frames for each of the racial/ethnic groups.

Results: Hispanics are the most highly vaccinated of the three groups and have experienced the greatest reduction in COVID-19 risk. Pre-vaccination, Hispanic/Latino residents were 6.03 times more likely to test positive, and 2.11 times more likely to be hospitalized for COVID-19 compared to NHW, but post-vaccination, the risk for the same outcomes dropped to 3.19 and 1.14, respectively. The lowest vaccinated group in this study, Black or African American residents, didn't experience the same risk mitigation. Black residents experienced a lower risk of infection pre-vaccination, and had 1.48 times the risk of hospitalization compared to the NHW. Post-vaccination, the risk of infection and hospitalization increased for Black/African American residents as compared to NHW to 1.39 times and 3.00 times, respectively. All racial and ethnic groups studied experienced a drop in COVID-19 mortality post-vaccination. The mortality rate among Hispanic/Latino residents dropped by 74% post-vaccination compared to pre-vaccination, 57% among the Black/African American population, and 54% among the NHW population.

Conclusion: Marin County's promotion of health equity, as evidenced by high vaccination rates, has mitigated the disproportionate disease burden of COVID-19 among racial and ethnic groups. It is evident that mass vaccination, and most importantly, equal access to vaccination may be the highest yielding strategy in achieving health equity in diverse communities such as Marin County.