

# New study on COVID-19 vaccinations in the largest US cities finds stark inequities

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In a study of the 9 largest U.S. cities, researchers at Columbia University Mailman School of Public Health found stark racial, ethnic, and socioeconomic inequities in COVID-19 vaccination rates across

neighborhoods. The study showed that high vaccination neighborhoods had more white residents, fewer people of color, higher incomes, and lower poverty rates. These high vaccination neighborhoods also had lower historical COVID-19 death rates, showing that lifesaving vaccines have been slow to reach the areas that were hardest-hit by the pandemic. The findings are published online in *JAMA Health Forum*.

The researchers analyzed inequities in vaccination in the 9 largest U.S. cities covering a [total population](#) of 40.8 million people: New York, Los Angeles, Chicago, Houston, Phoenix, Philadelphia, San Antonio, San Diego, and Dallas.

Using data on COVID-19 vaccination and [death rates](#) from state and local health authorities, the researchers sorted [neighborhoods](#) into four groups in order of vaccination rate, which they defined as the fraction of adults with at least one dose. Neighborhoods in the lowest vaccination group had less than half the vaccination rate of those in the highest group (28 percent vs. 60 percent).

To assess inequities, the researchers then linked these neighborhoods with sociodemographic data from the American Community Survey. Racial disparities were particularly large: in the lowest vaccination neighborhoods, 25 percent of the population was Black and 52 percent was white, while in the highest vaccination neighborhoods just 6 percent of the population was Black and 70 percent was white. There were also large disparities by income: the average low-vaccination neighborhood had half the median income and over twice the poverty rate of the average high-vaccination neighborhood.

The researchers then studied whether vaccinations were going to people in hard-hit areas as measured by historical COVID-19 death rates. "The 209 neighborhoods with the highest death rates accounted for half of historical COVID-19 deaths, but they went on to receive only 26 percent

of vaccinations," said Adam Sacarny, Ph.D., assistant professor of Health Policy and Management at Columbia Mailman School of Public Health. "That finding is particularly concerning because it shows that the places that have borne the greatest burden of COVID-19 are not getting vaccinated at the same rate to prevent future harms from the pandemic."

To explain these findings, the researchers note that these inequities have occurred in a context of underinvestment in public health, especially in marginalized communities. "They reflect inequities in [health](#) care access that predate the pandemic," said Jamie Daw, Ph.D., assistant professor of Health Policy and Management at Columbia Public Health. "They are also hard to separate from the medical racism that underlies the legitimate mistrust in the medical system felt by many people of color."

"Our findings show that cities have an opportunity and urgent need to address vaccination inequities," said Sacarny.

**More information:** Adam Sacarny et al, Inequities in COVID-19 Vaccination Rates in the 9 Largest US Cities, *JAMA Health Forum* (2021). [DOI: 10.1001/jamahealthforum.2021.2415](https://doi.org/10.1001/jamahealthforum.2021.2415)

Provided by Columbia University's Mailman School of Public Health

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