May 2022

COVID-19 Vaccination Strategies to Advance Health Equity in San Diego County

How COVID-19 Case Data Was Used to Inform Vaccination

County of San Diego | Health and Human Services | Public Health Services

Suggested citation:
County of San Diego, Health and Human Services Agency. *COVID-19 Vaccination Strategy to Advance Health Equity in San Diego County*. May 2022.

This report was prepared by the Office of Community Health Statistics in consultation with the County of San Diego Test, Trace and Treat (T3) Strategy team. This team, comprised of staff across the County enterprise, was integral to the COVID-19 response in the County of San Diego.

Inquiries regarding this document may be directed to:

Community Health Statistics Unit
3851 Rosecrans St.
San Diego, CA 92110
(619) 692-6667
www.SDHealthStatistics.com

COVID-19 Vaccination Strategies to Advance Health Equity in San Diego County

Contents

Timeline of Major COVID-19 Milestones in San Diego County, 2020

2020

FEB

- COVID-19 declared local health emergency and local emergency on February 14, 2020.

MAR

- March 9th: First positive COVID-19 case reported in San Diego County.
- March 10: Emergency Operations Center was opened and staffed.
- Began collecting population-wide COVID-19 case rate data daily.
- Used demographic and health tables from previous infectious disease outbreak to build projection models for COVID-19 impact.
- Local restrictions issed on March 13th and California issued a statewide stay-at-home order on March 19th.

APR

- The Test, Trace, and Treat (T3) Strategy was formed to address three crucial areas of the response: testing, tracing, and treatment.

MAY

- Worked with local modelers and looked at national models to make projections for potential hospital and emergency department use to avoid overwhelming health care systems.
- May 5th: South Bay Saturation Strategy launched.
- Cases were low so the beaches were reopened, but there was a tourism spike for Memorial Day.

JUN

- There was a partial reopening of indoor settings on June 12 followed by a spike of cases.
- Engaged Promotoras model and partnered with multiple ethnic-based associations to reach disproportionately effected and high-risk groups.

JUL

- Surge in cases after the Fourth of July impacted the health care delivery system.
- July 5th: Indoor operations for certain sectors closed.

AUG

- Rates decreased from July, but still endemically high, so school remained virtual.
- August 28th: California introduced the Blueprint for a Safer Economy tier system for businesses reopening based on each county's case rates and percentage of positive tests. San Diego County assigned to Red Tier.

NOV

- November 10th: Cases were increasing and San Diego County assigned to Purple Tier by State.

DEC

- New stay-at-home order issued due to low capacity in Southern California ICUs (went into effect in San Diego on December 6th at 11:59pm)
- The COVID-19 Vaccine Clinical Advisory Group provided guidance for vaccine distribution and recommendations using a health equity lens.
- December 8th: COVID-19 Vaccination Plan for San Diego County submitted to the State.
- December 15th: Vaccine became available for emergency use, with a focus on medical personnel and those in congregate living, as based on the California Department of Public Health (CDPH) tier system.

Timeline of Major COVID-19 Milestones in San Diego County, 2021

2021

JAN
- Peak in cases in early January.
- January 11th: First vaccination super station opened outside of Petco Park.
- Persons aged 75 years and older eligible to receive vaccine on January 18th, adults 65+ eligible on January 23rd.
- Expansion of vaccination sites across the county.
- January 25th: Regional stay-at-home order was lifted.

FEB
- Project SAVE Pilot Project started focusing on making sure vaccinations were available to communities experiencing high burden of COVID-19 in the southern part of San Diego County.
- February 27th: Vaccination eligibility expanded to essential workers, teachers, emergency workers, agricultural and food services, etc.

MAR
- March 15th: Vaccination eligibility expanded to those with additional high-risk medical conditions.
- March 17th: San Diego enters the Red Tier of the State's tiered system.

APR
- April 1st: General population 50 years of age and older eligible for vaccine.
- April 7th: San Diego County in Orange Tier of the State's tiered system.
- April 15th: Vaccination eligibility opened in California to those 16 years of age and older.

MAY
- May 10th: Pfizer vaccine approved for 12 to 15 year olds.

JUN
- June 9th: San Diego County assigned to the Yellow Tier of the State's system.
- June 15th: California Blueprint for a Safer Economy is retired.
- June 12th: 75% of eligible San Diegan County residents received at least one dose of the vaccine.

JUL
- Cases surge.

AUG
- Schools reopen for in-person learning.
- Cases peak and began decreasing.
- August 28th: 75% of eligible San Diego County residents fully vaccinated.

SEP
- September 22nd: Pfizer vaccine booster available to fully vaccinated, eligible residents.

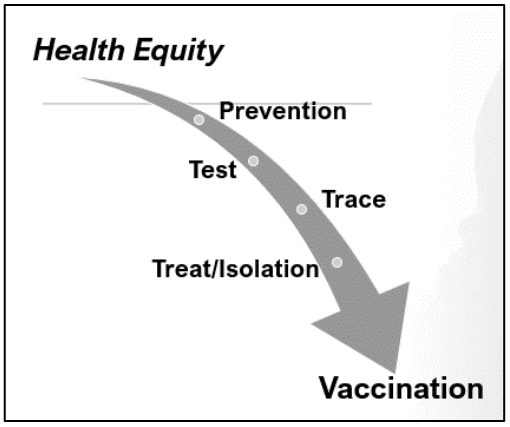
OCT
- October 21st: Moderna and J&J/Janssen booster approved.
- Cases remain steady but higher than levels seen during June 2021.

NOV
- November 2nd: Vaccine approved for 5 to 11 year olds.

Background

The first local community positive case of the 2019 novel coronavirus (COVID-19) among a San Diego County resident was reported in early March 2020. The County of San Diego (CoSD) launched its T3 Strategy: Test, Trace, and Treat (**Figure 1**) in April 2020, a large-scale, equity-focused, population health-based strategy using immense collaborative efforts to achieve collective impact in protecting the public's health. Vaccination was included as part of the T3 Strategy with the anticipation of COVID-19 vaccine availability. Health equity has been an essential strategy and goal that has been threaded through all T3 programs and activities.

FIGURE 1. T3/VACCINE STRATEGY INFORMED BY HEALTH EQUITY LENSES.



The CoSD COVID-19 Vaccination Plan was submitted to the State on December 8, 2020. The COVID-19 Vaccination Plan focused on a "response that reaches all vulnerable populations" and a "transparency of the process for equitable distribution of vaccine." A Health Equity Strategy, also submitted to the State in late 2020, established the goal to "ensure equitable access to services, including testing and vaccination, for all San Diego County residents in response to the COVID-19 pandemic."

The County of San Diego's ambitious goal was to fully vaccinate 75% of its 2.8 million eligible adult population, prior to approval for children, and to ensure historically underserved groups were protected. To accomplish this, CoSD set as a goal that 75% of eligible adult residents would have at least one dose of the vaccine by July 1, 2021. Through a vaccine ecosystem which consisted of a variety of vaccine providers that reached all communities and populations in the county, San Diego County achieved the highest vaccination rates among Southern California counties and in California overall. Additionally, vaccination rates were highest in the South Region of San Diego County where residents, many of Hispanic ethnicity, were disproportionately impacted by COVID-19, reflecting a successful implementation of the CoSD vaccination strategies based on the data.

Decision-Making

The County of San Diego (CoSD) has a long history in advancing health equity. In 2016, the County Chief Administrative Officer declared disproportionality as a priority, which led Public Health Services (PHS) to systematically review the data of each PHS Branch to identify potential disproportionalities across programs and services provided. CoSD also added Branch-level Health Equity goals to the PHS Strategic Plan (2019). In addition, PHS is in the process of developing a new PHS Health Equity Plan, 2021-2024 and a new Health Equity departmental policy at the time of publishing this document.

Early in the pandemic, the Board of Supervisors formed a subcommittee with an emphasis on health equity. Regular presentations to the Board of Supervisors were established to provide COVID-19 response updates and request Board approval for new, essential actions. The presentations included

epidemiological and clinical updates from the Public Health Officer, with an emphasis on the disproportionate impacts of COVID-19 and the importance of health equity in the response. Presentations from other sectors in the response were also made, including Public Health Hotels, Behavioral Health Services, Vaccinations, and Economic Updates. In early December 2020, the COVID-19 Vaccine Clinical Advisory Group, comprised of CoSD's clinical partners, provided guidance for vaccine distribution and recommendations using a health equity lens.

The Public Health Officer prepared the "Health Equity Strategy," submitted to the State in late 2020, establishing the goal to ensure equitable access to services, including testing and vaccination, for all San Diego County residents in response to the COVID-19 pandemic. Early in the pandemic, the Chair and Vice-Chair of the Board of Supervisors emphasized the disproportionate impacts of COVID-19 and the importance of health equity to the response during regular press conferences. A Health Equity Taskforce was formed, comprised of community members, to advise and assist CoSD in its response. The Chair and Co-Chair of the Taskforce authored a letter to City Councilmembers in February of 2021 stressing that, "with an ever-evolving situation, we are making every attempt to provide access to our hardest-hit communities." The Chair worked closely with the Public Health Officer, the Director of the T3 Strategy, and the Chief Nursing Officer to communicate the importance of health equity and, while ensuring accessibility for all, focusing on communities that were most significantly impacted.

Surveillance & Reporting COVID-19 Case Data

The Epidemiology and Immunization Services Branch (EISB) of Public Health Services (PHS) works to identify, investigate, register, and evaluate communicable, reportable, and emerging diseases and conditions to protect the health of the community. COVID-19 surveillance utilizes many components of the public health surveillance system in disease response and population-wide COVID-19 case data has been collected daily by the EISB since the first local case was reported in March 2020. As required by law, EISB receives COVID-19 disease reports from providers, clinics, hospitals, and laboratories across San Diego County, and this information is entered into the disease registry utilized by EISB called WebCMR. ESIB exports data from WebCMR for analysis and surveillance, and a daily file of all confirmed and suspected COVID-19 cases is shared with the California Department of Public Health (CDPH). In October 2021, suspected cases of COVID-19 were also included in the reports and the list sent to CDPH.

San Diego County is home to a very diverse population of over 3.3 million residents, with no majority racial or ethnic population. With an international border, San Diego County is also home to large and diverse refugee and immigrant communities. This diversity required multiple analysis and outreach approaches to inform all residents of vital health information.

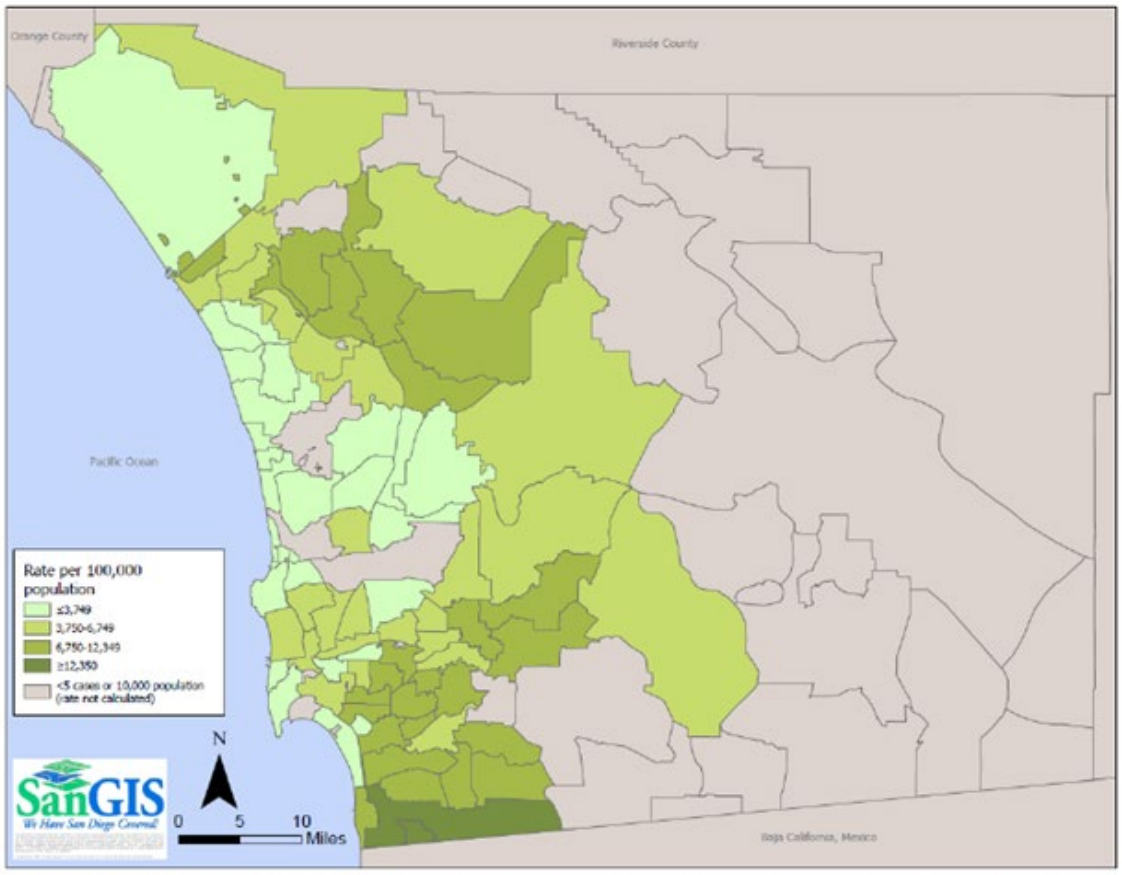
Data analysis and surveillance were completed by PHS staff using geographic, age, gender, and race/ethnicity variables to assess case rates and identify at-risk groups. These data were shared with

the COVID-19 Incident Command System for internal monitoring and to inform high-level decision-making. Reports, dashboards, and other COVID-19 information produced by PHS and other CoSD groups were available publicly on San Diego County's COVID-19 Website (www.coronavirus-sd.com) where detailed data were posted regarding case and vaccination rates. Here, data were broken out by zip code, jurisdiction, age, gender, and race/ethnicity to identify needs and trends. EISB also prepared a weekly *COVID-19 Watch* to report rates of outbreaks, positive cases, hospitalizations, and deaths. It organized data by demographics, zip code, and exposure settings.

For example, analysis of case rates by geography and by race/ethnicity revealed patterns that suggested a certain focus to the response. **Figure 2** below is a map that shows case rates by zip code from late January 2021. It illustrates that certain regions/communities were more impacted than others at the height of the pandemic.

FIGURE 2. SAN DIEGO COUNTY ZIP CODES BY COVID-19 CUMULATIVE CASE RATES.

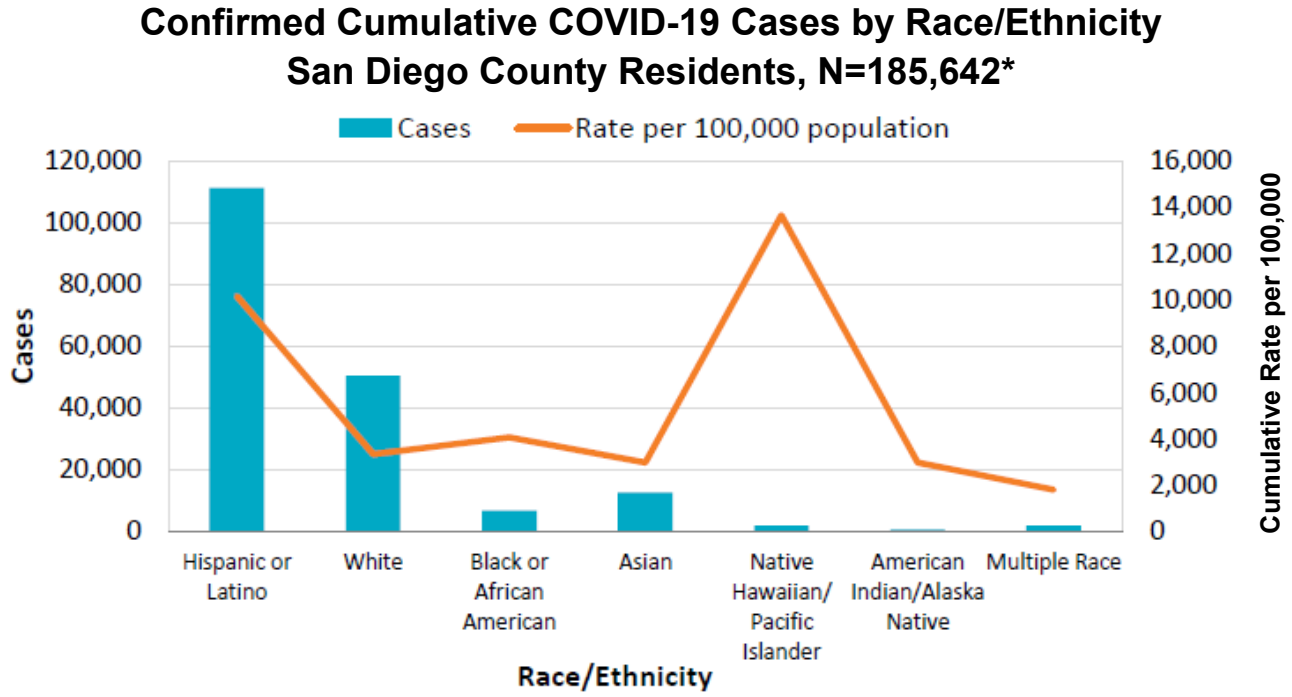
Cumulative COVID-19 Rates by Zip Code of Residence, San Diego County (Countywide Rate = 6,778 per 100,000 Population)



Rates calculated using 2019 population estimates from the San Diego Association of Governments. Rates not calculated for counts under 5 cases or populations less than 10,000. Zip code is zip code of residence, which may not be location of exposure.
Case counts and rates for each zip code are updated routinely on the County of San Diego COVID-19 website.
Data through January 23, 2021.

Figure 3, from the *COVID-19 Watch*, shows relative case rates by different race and ethnic groups from late January 2021. Analysis of this data by County epidemiologists revealed higher rates of COVID-19 in certain populations throughout San Diego County, such as Hispanic or Latino, Native Hawaiian, and Pacific Islander, and Black or African American communities.

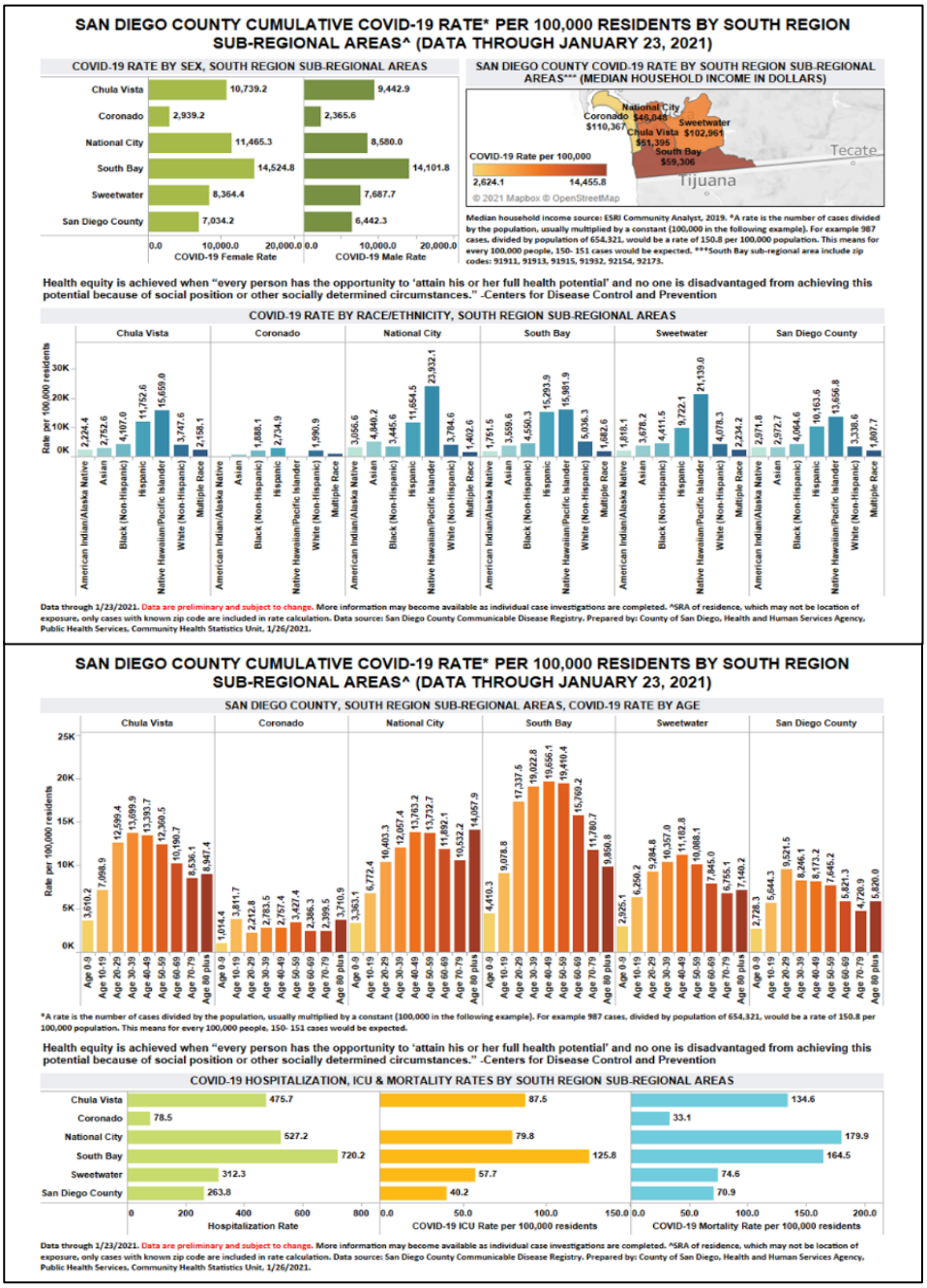
FIGURE 3. CUMULATIVE CASE RATES OF COVID-19 BY RACE/ETHNICITY SHOWING RELATIVE CASE RATES AMONG DIFFERENT RACE/ETHNIC GROUPS, INCLUDING HISPANIC/LATINO POPULATIONS.



*Race/ethnicity is unknown for 41,553 cases.
Data through January 23, 2021.

Disaggregating the population-wide COVID-19 data further allowed trends to be seen for each of the Health and Human Services Agency (HHSA) Regions and their respective communities. The Community Health Statistics Unit developed Health Equity Dashboards (**Figure 4**) early in the response and continues to update them weekly to identify COVID-19 disparities and inequities by age, gender, geography, race/ethnicity, and socioeconomic status for these geographies.

FIGURE 4. SOUTH REGION HEALTH EQUITY DASHBOARD.



The Health Equity Dashboards provide easy-to-understand visualizations and made it evident that during the surge of cases, the highest cumulative rates of COVID-19 occurred in South Region, particularly in South Bay subregional area. Further analysis of South Region case data showed Native Hawaiian/Pacific Islander and Hispanic residents and those aged 20 to 60 years old generally had higher cumulative rates of COVID-19, as of January 23, 2021. This display of data was one of the many pieces to help inform prevention efforts and targeted responses.

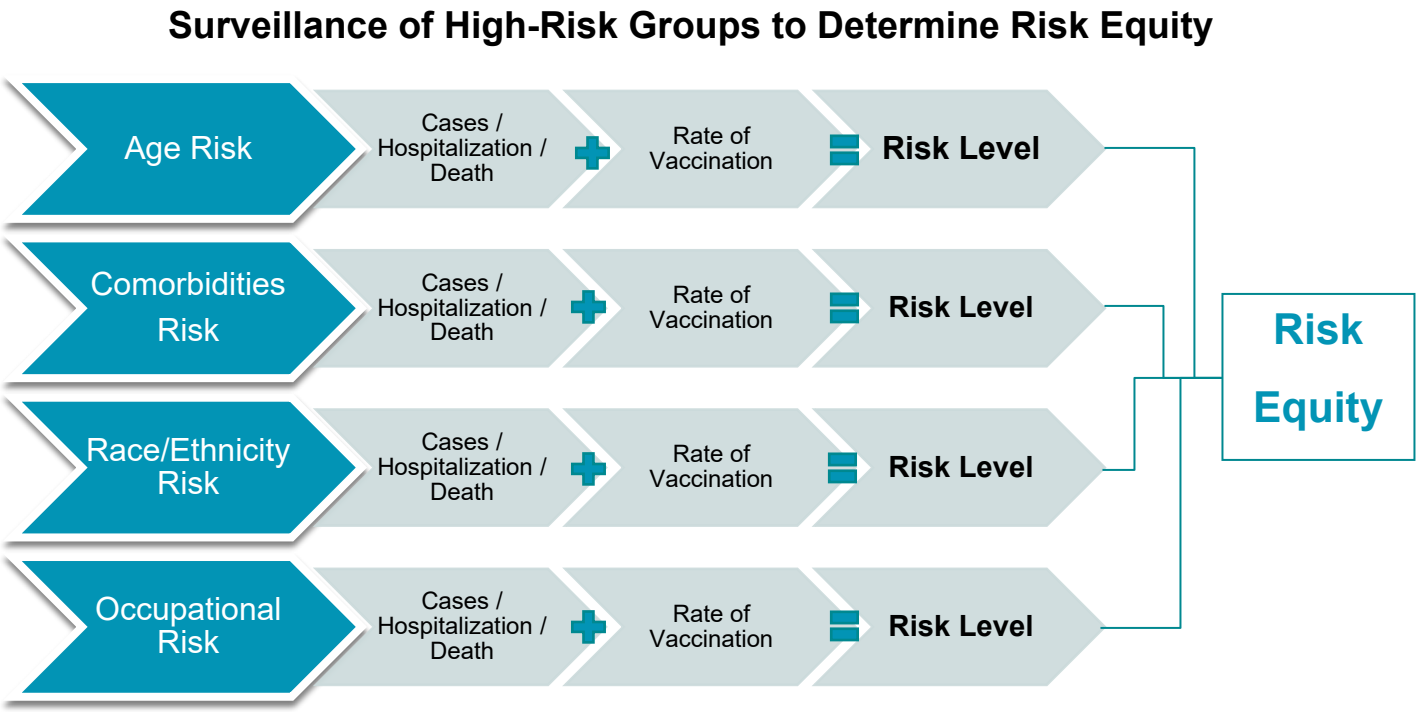
Risk Assessment and Vaccine Planning

Non-traditional population surveillance by the Community Health Statistics Unit (CHSU) identified groups that were most at risk of illness to inform a targeted response for the vaccine rollout. Surveillance was conducted proactively, before the vaccine was available, and simultaneously, once the vaccine was available.

Prior to the approval of vaccines, the population estimates informed which groups were at highest risk of contracting COVID-19. The Centers for Disease Control and Prevention (CDC) identified higher risk groups and the County of San Diego staff used Census and Bureau of Labor Statistics survey data to estimate the number of individuals in various risk categories for planning purposes.

Older adults, individuals with multiple or severe health conditions or disabilities, racial and ethnic minority groups, and frontline workers had, and continue to have, a higher likelihood of more severe illness from COVID-19. **Figure 5** shows how surveillance considered risk to the population from various lenses of health equity, including age, comorbidities, race/ethnicity, and occupation by using existing population estimates, where available, to determine high-risk groups. These identified groups were deemed priority populations for testing and vaccination strategies. Geographic case data determined rates were higher in more densely populated parts of the county. Using demographic, occupation, and health data enabled the identification of the distribution of risk among subpopulations. For example, the Hispanic population in South Region communities had much higher case rates initially, requiring additional culturally appropriate messaging about prevention and vaccination to reduce their inequitable risk compared to other racial and ethnic groups. Looking at the rates of COVID-19 among the subpopulations enabled the analysis of the equity of these risks across various population groups.

FIGURE 5. FLOW CHART DESCRIBING SURVEILLANCE OF HIGH-RISK GROUPS AND RISK EQUITY USING POPULATION HEALTH SURVEILLANCE.



In the weeks prior to the roll out of vaccine, the State implemented a tier system for vaccination priority. Healthcare personnel and those living in congregate living facilities were eligible to receive the vaccination first, followed by essential workers and then those 65 years and older, due to higher risk of severe illness and death from the virus. This age group was also the most likely to have more comorbidities, putting them at higher risk for more severe disease. The occupational risk estimates provided information to help partner with local industries to provide vaccination for essential workers. Risk data was also used to inform the creation of community partnerships, such as using the Promotoras model, to conduct targeted outreach to higher-risk racial and ethnic groups. Additionally, when examining this data, there were intersections where individuals met multiple high-risk criteria, such as a senior resident with a comorbidity such as diabetes, which made vaccine need estimates more difficult to calculate. These intersections created an overestimate of need but provided multiple opportunities to engage individuals using various targeted outreach strategies for vaccination.

Applying daily surveillance data and the different reproductive rates of the COVID-19 virus by age, select comorbidities, race/ethnicity, and occupation allowed PHS staff to create predictive models. Weekly estimates were made beginning in April 2020 projecting the number of cases, hospitalizations, and deaths in future months. CHSU collaborated with the CDPH modeling team to develop state, regional,

and county models. This modeling later led to projecting cases among those who were vaccinated, compared to those unvaccinated.

Vaccination Site Planning

The preparations for vaccinations began in the Fall of 2020. The San Diego County "COVID-19 Vaccination Plan" was submitted to the state on December 8, 2020. Vaccines were pre-positioned at hospitals on December 11, 2020, so it could be quickly deployed. The first County of San Diego (CoSD) vaccination site was located at the Health Services Complex in late December to vaccinate the vaccinators. Numerous train-the-trainer vaccination events were held in December and January.

In January 2021, through community partnerships, the San Diego County Vaccination Ecosystem was fortified to meet the anticipated demand as additional tiers were made eligible for the vaccinations. The Ecosystem, in addition to the traditional immunization providers, included County-hosted and County-sponsored vaccination sites. An innovative component of the County's vaccine site strategy included locations that could accommodate large numbers of people (such as Petco Park) while also accessible to communities with the highest burden of disease.

The Ecosystem of sites included:

- County-hosted sites
- Vaccination super stations
- Mobile vaccination teams for homebound residents and long-term care facilities
- Mobile Operation Collaboration Vaccination Teams to reach rural and agricultural communities
- Partnerships with health systems (hospitals)
- Pharmacies
- City partnerships

As vaccine eligibility expanded to include a larger portion of the population, communities with the highest burden continued to be the focus, with sites in numerous locations in the southwest area of the county, where COVID-19 disease burden was highest.

As vaccination rates increased in the areas of highest need, additional vaccination sites were selected to serve other areas of the county. The percent of population vaccinated at the zip code and census tract levels were evaluated to identify areas with the lowest vaccination rates. Additionally, population size of the areas with lowest vaccination rates was reviewed to identify locations with both low vaccination rates and larger populations. All this information was evaluated on an ongoing basis to determine which areas needed vaccination sites as programs expanded.

Through ongoing outreach work with the older adult and disability sector, feedback was gathered on the needs of vulnerable older adults who had barriers accessing vaccination sites. Some residents needed

transportation assistance, while some were essentially homebound. CoSD worked with 211 San Diego to develop a screening tool to identify these callers and offer resources. A data inquiry with HHSA's In-Home Supportive Services program found that approximately 1,500 recipients may be homebound (e.g., recipient data included descriptors such as "life support needed" and "mental/cognitive disability"), so these recipients were sent a flyer (in their language) giving information about the free program. The CDPH MyTurn online system added questions about transportation and homebound status and routed the resident's information to 211 San Diego for transportation assistance and to HHSA for homebound vaccination.

The CoSD vaccination locations were scaled back as demand decreased and as pharmacies and medical practices assumed a greater role in providing vaccinations. On July 23, 2021, the CoSD was operating the "Great Eight," a collection of geographically distributed no-cost vaccination sites to continue progress on vaccination rates and these sites remained in place as of October 2021. As demand for vaccinations at the stationary sites declined, partners informed the CoSD that there was still demand, but that vaccinations needed to be brought to community locations such as churches, local business, and grocery stores. The CoSD coordinated with partner organizations to provide vaccinations for requested community sites. More than 150 mobile vaccination events have been conducted since the program started in June 2021.

Development of the Health Equity Zip Codes

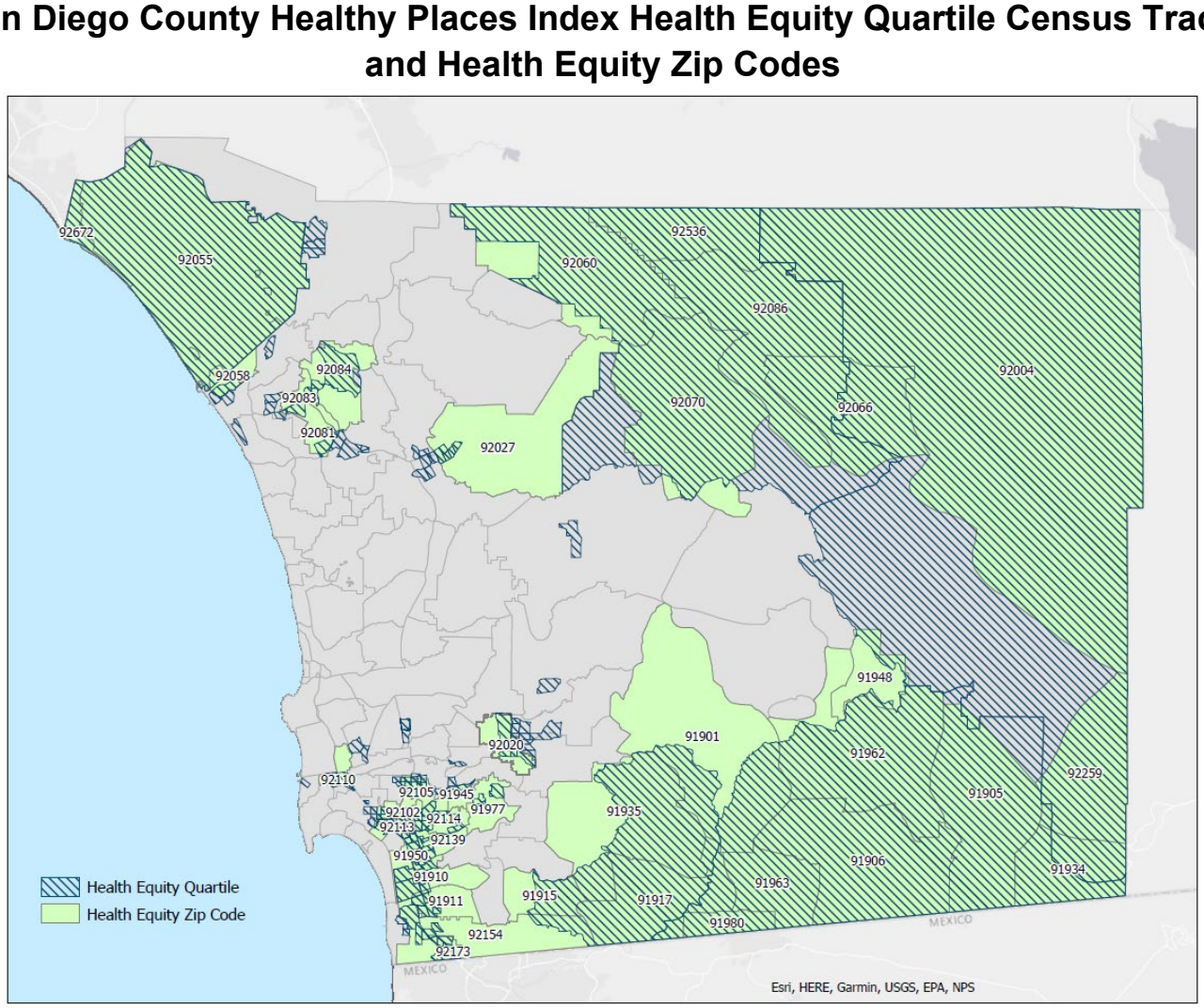
To increase access to the vaccine with a focus on health equity, CDPH developed the Vaccine Equity Metric (VEM). For the VEM, CDPH identified priority zip codes based on a set of criteria which included CDPH-derived scores and the California Healthy Places Index (HPI), which was developed by the Public Health Alliance of Southern California (healthyplacesindex.org). Using the newly created scores at the zip code level, each zip code was assigned by the State into a quartile relative to all zip codes in California. The HPI and the VEM considered social determinants of health at the community level to better understand the health and well-being of Californians, as well as create a quantifiable score that allowed geographies to be compared across the state. The State defined zip codes with the least healthy community conditions as being in the first quartile (representing approximately 25% of the state population). CDPH identified 12 zip codes in San Diego County that fell within the first quartile, representing about 8% of the total population in the county.

CoSD utilized HPI scores at the census tract level to re-evaluate and apply this indicator of health outcomes locally, relative to geographies within the county instead of the entire state. While COSD followed CDPH's overall approach, some modifications were made to better inform local decisions. For each zip code in San Diego County, CoSD identified how much of the area was composed of census tracts that were in the HEQ. There were 79 zip codes that had HEQ census tract areas within the zip code boundaries. Of these 79 zip codes, 34 had at least 25% of its area within a HEQ census tract. All

12 of the zip codes identified by the State were also included in the 34 zip codes selected with this method. Additionally, of the original 79 zip codes, five met the criteria for having a high burden of COVID-19 (defined as a cumulative case rate at that time of at least 10,000 COVID-19 cases per 100,000 population). This resulted in a total of 39 Health Equity Zip Codes for San Diego County. See Appendix for a summary of the Health Equity Zip Codes.

Figure 6 below is a map of the San Diego County Health Equity Zip Codes, and the census tracts within these Zip Codes that fall within the fourth ("least healthy") quartile relative to all census tracts in the county.

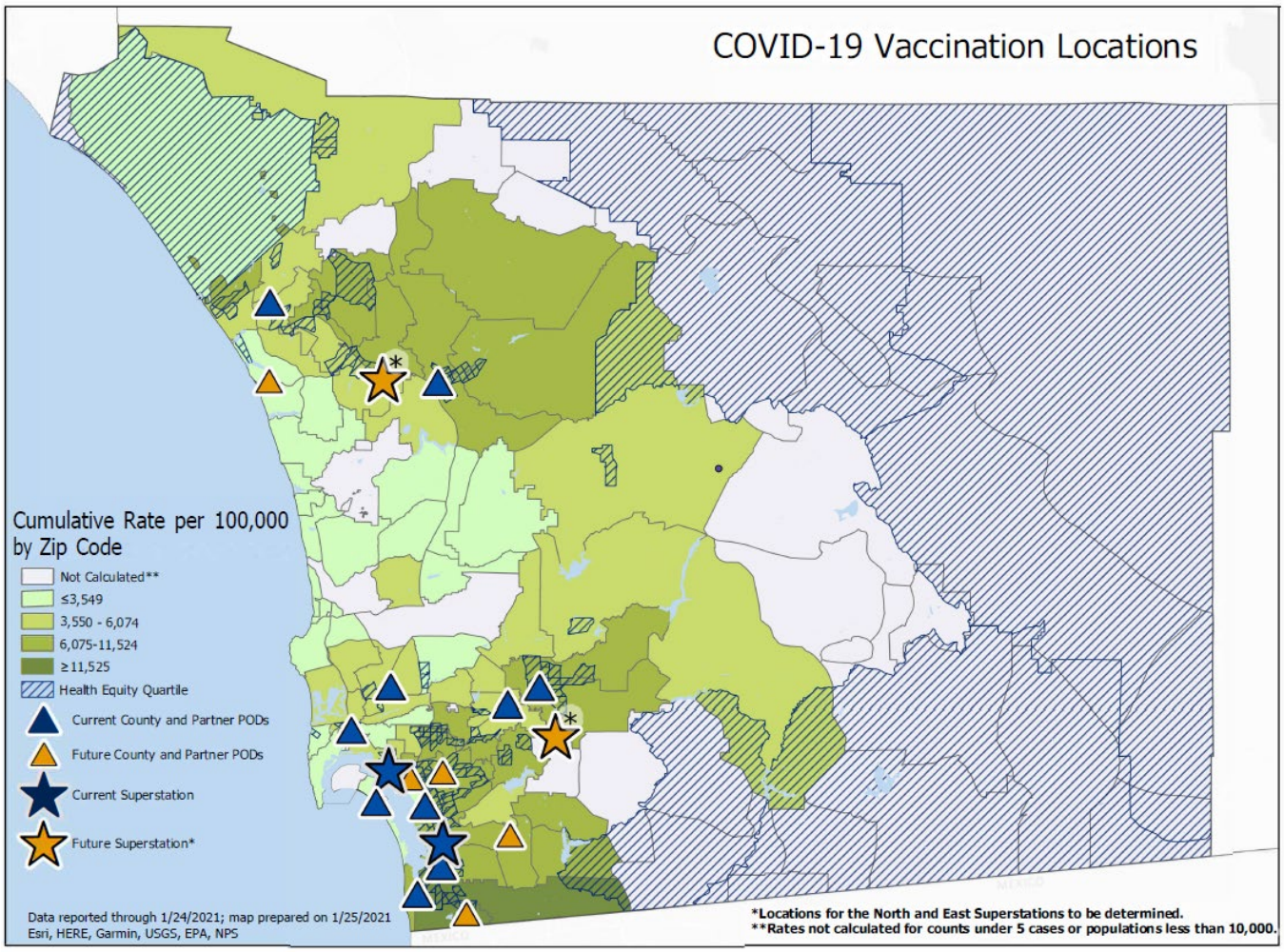
FIGURE 6. SAN DIEGO COUNTY HEALTHY PLACES INDEX HEALTH EQUITY QUARTILE CENSUS TRACTS AND HEALTH EQUITY ZIP CODES.



The Health Equity Zip Codes were utilized throughout the response. In April 2021, vaccine providers were directed by CDPH to allocate at least 40% of their doses to individuals residing in Health Equity communities. The CoSD gave the list of 39 zip codes to providers to help them prioritize vaccination appointments while vaccine supply was an issue. These zip codes were also used to determine priority for fulfilling mobile vaccination event requests and identifying new vaccination site locations.

Figure 7 shows the placement of vaccination stations near communities where community case rates were highest.

FIGURE 7. COVID-19 VACCINATION SITES RELATIVE TO CUMULATIVE COMMUNITY CASE RATES.



Strategies to Reduce Inequities

Data was made publicly available in the interest of transparency. It was used for prioritizing outreach strategies and engagement with community advocacy groups. These community groups began with a focus on testing and providing messages on non-pharmaceutical interventions, which eventually shifted to a focus on vaccination. These efforts led to programs which increased vaccination equity among all San Diego County residents. Reports and dashboards on the County of San Diego's COVID website were used to identify COVID-19 disparities and inequities beyond the Health Equity Zip Codes. Testing data was visualized with an emphasis on race/ethnicity or HPI.

Throughout the pandemic several key strategies were launched to address disparities in case and vaccination rates among the communities most impacted. These strategies grew out of what the data showed. Below are two examples of programs developed to address inequities identified in the ongoing analyses of COVID-19 case and vaccination data.

South Bay Saturation Strategy

The South Bay Saturation Strategy, an extension of the County of San Diego's Test, Trace, and Treat (T3) Strategy, launched in May 2020 to serve the unique and diverse residents across San Diego's South Bay community, home to one of the region's densest populations. The goal was to address the rising numbers of positive COVID-19 cases in the community by providing free, accessible testing and vaccination resources (once available), and ensure timely services. To maximize impact for the South Bay community, data, coordination, and partnership were utilized to guide implementation and planning efforts for COVID-19 testing and vaccination sites. Vaccination sites were strategically added to support residents who were and continued to be disproportionately affected by COVID-19.

Project SAVE

Project SAVE (Scheduling Assistance for Vaccine Equity) was the County of San Diego's most significant and innovative effort to serve hard-to-reach communities by utilizing COVID case rate data to target higher-risk areas. Project SAVE was organized to increase vaccine equity by assisting those who face technology, language, or other health care barriers.

Working in partnership with local government entities and trusted partners, Project SAVE Community Health Workers (CHWs), also referred to as Promotoras, conducted outreach to educate communities on how to get a vaccine and the benefits of getting vaccinated. CHWs/Promotoras also had the ability to provide access to dedicated vaccine appointments along with referrals to no-appointment events. By bringing shared backgrounds, experiences, language, and culture to the communities they serve, CHWs/Promotoras served as an integral component for reaching those outside traditional channels of communication. They were a trusted source for COVID-19 vaccine information and other resources and were also part of the South Bay Saturation Strategy.

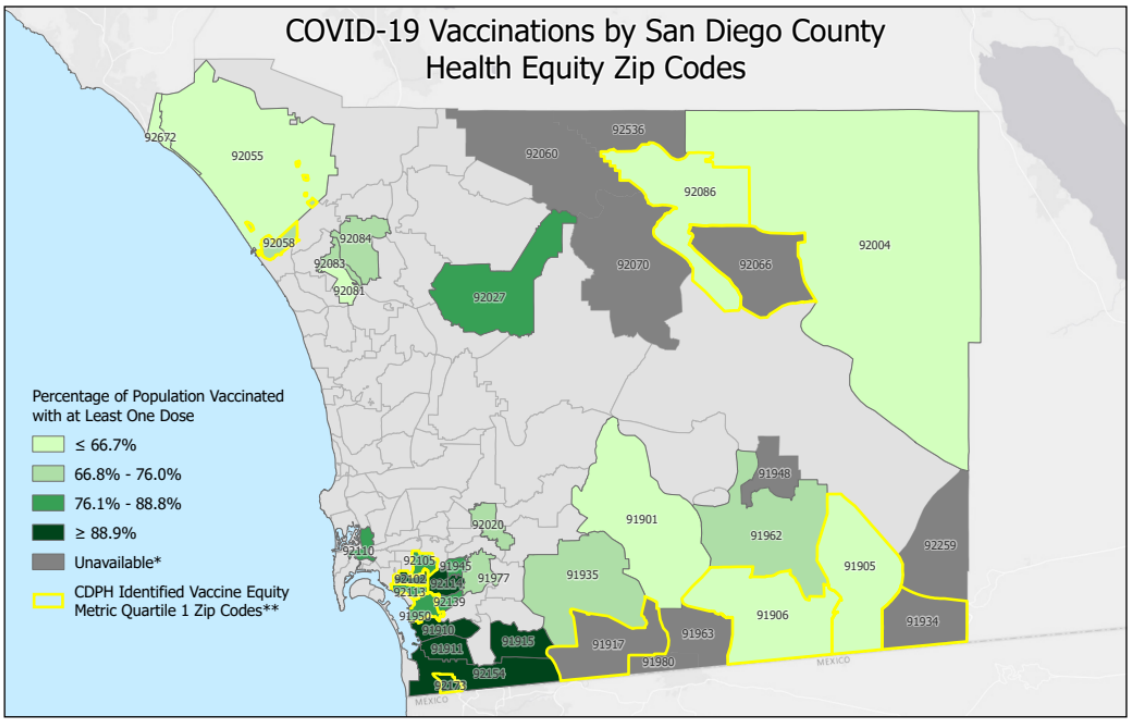
Project SAVE was announced in February 2021 and launched as a pilot in the South Bay. Vaccination rates at the zip code and census tract level were routinely shared with the CHW organizations to assist with their targeted outreach so they were reaching the areas with lowest vaccination rates. Specifically, the 39 Health Equity Zip Codes were provided to the project to focus their efforts into specific areas of San Diego County, expanding to City Heights and North County in early April 2021.

Results

There is evidence to suggest the South Bay Saturation Strategy and Project SAVE have helped bridge the gap to vaccination in South Bay, where many of the Health Equity Zip Codes fall. Relatively high vaccination rates have been achieved. With 93.0% of the eligible population vaccinated, vaccination rates were the highest in the South Region of San Diego County, an area that had the highest COVID-19 case rates and was the focus of health equity strategies.

Figure 8 below shows the relatively high vaccination rates achieved in Health Equity Zip Codes, including South Region, where there was a focused vaccination effort.

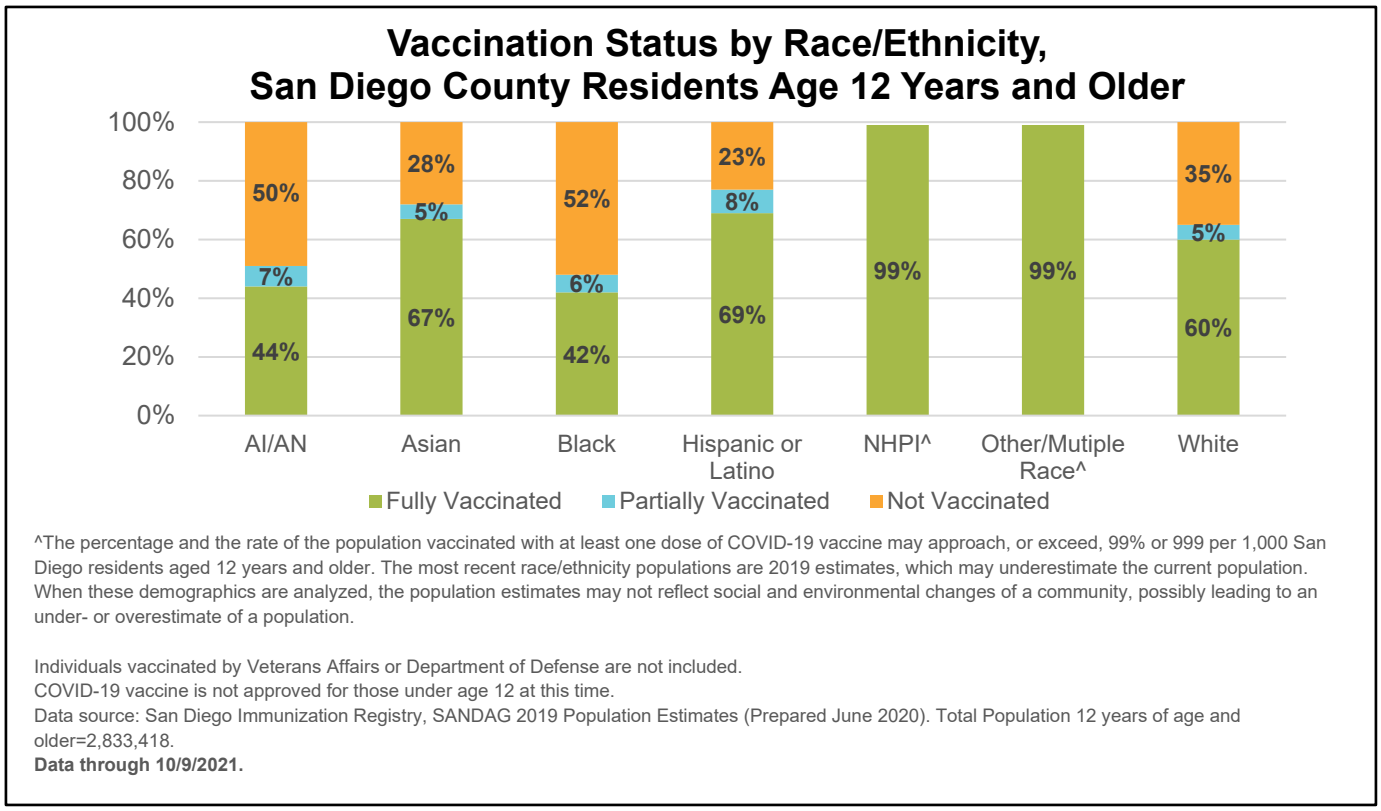
FIGURE 8. COVID-19 PERCENTAGE OF POPULATION VACCINATED BY HEALTH EQUITY ZIP CODE.



*Censored due to less than 6 individuals vaccinated or population smaller than 1,000.
**California Department of Public Health (CDPH) developed the Vaccine Equity Metric which combines the Health Places Index (HPI) with CDPH-derived scores. Zip codes with less healthy community conditions are in Quartile 1. For more information on CDPH Vaccine Equity Metric visit https://covid19.ca.gov/vaccination-progress-data/
Doses registered through 10/4/2021. Updated 10/5/2021. San Diego Immunization Registry, SANDAG 2019 Population Estimates (Prepared June 2020). Ages 12 years and older included in vaccination and population data.
39 zip codes were identified as Health Equity Zip Codes for San Diego County. Zip codes with at least 25% of the area within a HPI Quartile 4 census tract or zip codes experiencing a high burden of COVID-19 were selected. These 39 zip codes include the 12 zip codes identified in the CDPH Vaccine Equity Metrics Quartile 1. For more information on San Diego County Health Equity Zip Codes refer to the document COVID-19 Health Equity Zip Codes Summary and Vaccination Report on the County of San Diego's COVID-19 website.
Esri, HERE, Garmin, USGS, EPA, NPS

Figure 9 shows the relatively high vaccination rates achieved across different race and ethnic groups, which are particularly high among Hispanics or Latinos. This reflects positive results of the County of San Diego's approach.

FIGURE 9. CUMULATIVE PERCENTAGE OF POPULATION VACCINATED FOR COVID-19 BY RACE/ETHNICITY.

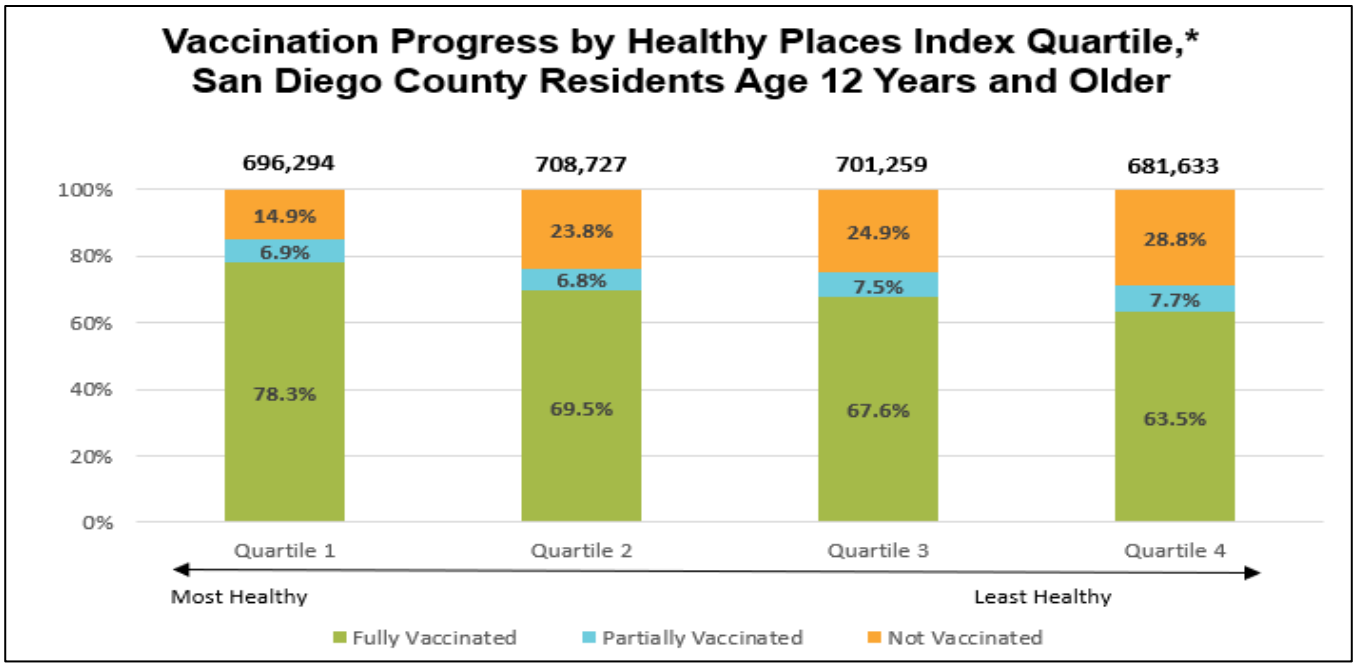


^The percentage and the rate of the population vaccinated with at least one dose of COVID-19 vaccine may approach, or exceed, 99% or 999 per 1,000 San Diego residents aged 12 years and older. The most recent race/ethnicity populations are 2019 estimates, which may underestimate the current population. When these demographics are analyzed, the population estimates may not reflect social and environmental changes of a community, possibly leading to an under- or overestimate of a population.

Individuals vaccinated by Veterans Affairs or Department of Defense are not included.
COVID-19 vaccine is not approved for those under age 12 at this time.
Data source: San Diego Immunization Registry, SANDAG 2019 Population Estimates (Prepared June 2020). Total Population 12 years of age and older=2,833,418.
Data through 10/9/2021.

This is not to say that there were still challenges in reaching higher vaccination rates among Health Equity Zip Codes. Vaccination rates remain lower than the San Diego County average for those communities that are least healthy, as shown in **Figure 10** (on the following page). Consequently, the County of San Diego continues to focus its vaccination and outreach efforts in the Health Equity Zip Codes. This reflects continuing challenges in getting all populations vaccinated and variation in success by Health Equity Quartile.

FIGURE 10. SAN DIEGO COUNTY RESIDENTS AND CUMULATIVE PERCENTAGE BY VACCINATION STATUS BY HEALTH EQUITY QUARTILE.

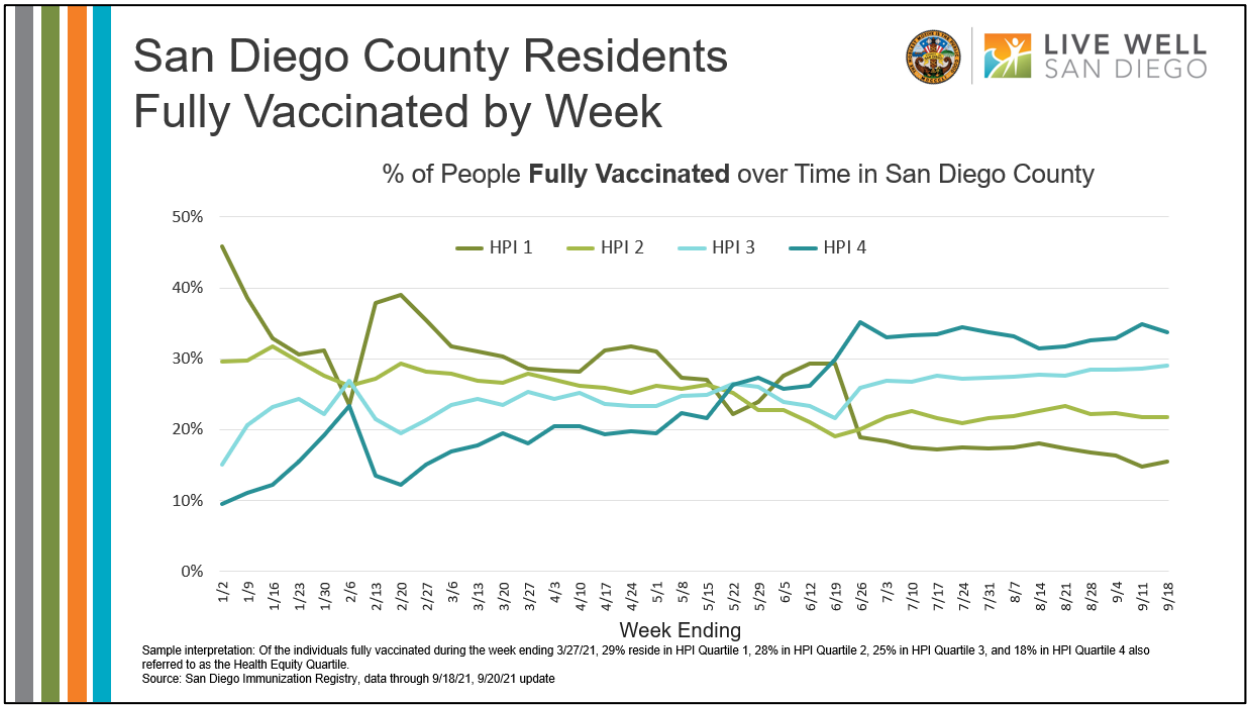


*The California Healthy Places Index.

Individuals vaccinated by Veterans Affairs or Department of Defense are not included.
COVID-19 vaccine is not approved for those under age 12 at this time.
Data source: San Diego Immunization Registry, SANDAG 2019 Population Estimates (Prepared June 2020). Total Population 12 years of age and older=2,833,418.
Data through 10/9/2021.

However, while the fourth quartile (the health equity quartile) has the lowest cumulative vaccination percentage, from July to September 2021 more individuals from the fourth quartile were vaccinated each week compared to all other quartiles. **Figure 11** (on the following page) shows the percent of San Diego County residents fully vaccinated per week by HPI quartile from the beginning of 2021 through mid-September of 2021.

FIGURE 11. PERCENT OF SAN DIEGO COUNTY RESIDENTS FULLY VACCINATED PER WEEK BY HEALTHY PLACES INDEX (HPI) QUARTILE.



Summary

COVID-19 has affected San Diego County since March of 2020 and will continue to affect the county long past the publishing of this report. Throughout the course of the pandemic, advancing health equity has been an essential strategy threaded through all programs and activities.

Surveillance of COVID-19 and analysis of the data showed how this virus has disproportionately affected certain populations within San Diego. While awaiting vaccine availability, those who were most at-risk were identified to inform an effective vaccine rollout. To ensure equity, the County of San Diego utilized the Vaccine Equity Metric developed by the California Department of Public Health and the California Health Places Index (HPI), created by the Public Health Alliance of Southern California. This approach considered social determinants of health to identify the least healthy communities, defined as Health Equity Zip Codes, and areas with the highest burden of COVID-19. These identified zip codes were prioritized in terms of vaccination appointments and scheduling of vaccination events and site locations, while also ensuring accessibility of vaccine to all County residents. The data were also used to prioritize outreach strategies and inform engagement with community advocacy groups. Programs such as the South Bay Saturation Strategy and Project SAVE (Scheduling Assistance for Vaccine Equity) increased vaccination equity among San Diego County residents. These efforts were part of a strategy that involved building of an ecosystem of vaccination sites, enlisting a large network of vaccine providers, and undertaking a number of innovative approaches.

The use of data to inform vaccination efforts has paid off. The area with the highest COVID-19 case rates had the highest rates of vaccination, among the eligible population. There were also relatively high vaccination rates achieved across different race and ethnic groups, and were particularly high among Hispanics or Latinos, who faced high case rates. However, when examining vaccination rates by Health Equity Zip Code, there were initial challenges in vaccinating the least healthy communities, but analysis of these communities has shown there has been improvement over time.

The County of San Diego's robust data collection and the design of strategies based on the analysis of data suggest the benefit of continuing to use data to inform decision making. The ultimate benefits is in the saving of lives. if San Diego County had the same rate of death as the nation, approximately 7,587 deaths due to COVID-19 would have been expected as of mid-November, instead of the 4,280 deaths that were recorded. An early and aggressive response from the County of San Diego resulted in **an estimated 3,307 lives saved**, as of November 13th, 2021.

Appendix

BE COVIDSAFE

COVID-19

San Diego County Health Equity Zip Codes Summary

Determining Health Equity Zip Codes for San Diego County:

- For each zip code, identified how much of the area is also a Healthy Places Index Health Equity Quartile (HEQ) census tract
  - 79 zip codes had HEQ census tract area within the zip code boundary
- Of these zip codes, selected those with at least 25% of the area within a HEQ census tract
  - 34 zip codes had at least 25% of the area in a HEQ census tract
- Of the original 79, identified additional zip codes with high burden of COVID-19 (defined as a cumulative case rate of at least 10,000 COVID-19 cases per 100,000 population)
  - 5 zip codes met the criteria

San Diego County Health Equity Zip Codes (39 Zip Codes)							
91901	91915	91948	91980	92058*	92083	92110	92173*
91905*	91917*	91950*	92004	92060	92084	92113*	92259
91906*	91934*	91962	92020	92066*	92086*	92114	92536
91910	91935	91963	92027	92070	92102*	92139	92672
91911	91945	91977	92055	92081	92105*	92154	

*California Department of Public Health (CDPH) assigned Vaccine Equity Metric Quartile 1 zip codes

The population of the 39 Health Equity zip codes is 1,081,964, or 32.3% of the San Diego County population.**

Percent of the Population Age 16 Years and Older by Race & Ethnicity, Percent of Individuals Vaccinated with at Least One Dose of COVID-19 Vaccine by Race & Ethnicity and Percent of Each Race & Ethnicity Population Vaccinated					
Race & Ethnicity	Population Ages 16 Years and Older***		Individuals Vaccinated with at Least One Dose		Population Vaccinated^
	Number	Percent	Number	Percent	Percent
Hispanic	393,629	47.1%	218,023	45.6%	55.4%
White	252,928	30.2%	110,829	23.2%	43.8%
Black or African American	62,367	7.5%	18,957	4.0%	30.4%
American Indian or Alaskan	5,469	0.7%	1,676	0.4%	30.6%
Asian	97,571	11.7%	52,222	10.9%	53.5%
Native Hawaiian or Other Pacific Islander	3,698	0.4%	3,422	0.7%	92.5%
Other/Multiple Race	20,714	2.5%	38,132	8.0%	99.0%^^
Unknown			35,298	7.4%	
Total	836,376	100.0%	478,559	100.0%	57.2%

** 2019 SANDAG population estimate, all ages.
*** 2019 SANDAG population estimate, age 16 years and older.
^ Percent of population age 16 years and older vaccinated with at least one dose of COVID-19 vaccine for each race/ethnicity population.
^^Percentage of population vaccinated capped at 99.0%. The percentage of the population vaccinated with at least one dose of COVID-19 vaccine may approach, or exceed, 99%. The most recent race/ethnicity population are 2019 estimates, which may underestimate the current population. When these demographics are analyzed, the population estimates may not reflect social and environmental changes of a community, possibly leading to an under- or overestimate of a population. For example, household dynamics may have changed as a result of COVID-19, where family members previously living apart may now be living together, therefore shifting the population of an area or demographic which may not be reflected in the 2019 population estimates.
Source: San Diego Immunization Registry data through 5/8/2021, 5/9/2021 update. Individuals vaccinated by Veterans Affairs or Department of Defense are not included.

LIVE WELL SAN DIEGO