RADx® Underserved Populations (RADx-UP) is a network of more than 125 community-engaged research project teams and mini-grant recipients across all 50 states, and U.S. territories and Tribal Nations.

RADx-UP project teams and grant recipients use the NIH RADx-UP Common Data Elements (CDEs), a standard set of study questions for their COVID-19 testing studies. The CDEs provide RADx-UP a way to aggregate data from across all the populations and communities that projects study and engage.

The RADx-UP Coordination and Data Collection Center (CDCC) harmonizes the NIH RADx-UP CDE data for transfer to the RADx Data Hub. The CDCC provides RADx-UP Core Analytic Datasets for cross-consortium analyses (learn more in Cross-Consortium Data Analysis (Core Analytic Datasets) document).

Area-level Datasets

The CDCC has prepared a series of area-level datasets from external sources that can be linked to the RADx-UP analytic datasets and used for epidemiologic analyses. These datasets include social determinant of health (SDOH) indices, COVID-19 positivity rates, and COVID-19 vaccination rates.

The current release of the **RADx-UP Linkage Datasets** consists of data from the sources described below.

SDOH Indices Linkage Dataset

The SDOH Indices Linkage Dataset links metrics from five indices of social determinants of health (described below) to data representing RADx-UP study participants who have provided a ZIP code.

- **Agency for Healthcare Research and Quality (AHRQ) Socioeconomic Status (SES) Index.** This index comprises five constructs: occupation, income, wealth, education and housing. Principal components analysis was used to derive the SES Index score. SES assigns a single composite measure to individual participants based on measures of residential area characteristics. **[https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.233.6403&rep=rep1&type=pdf]**

- **Social Vulnerability Index (SVI).** This index encapsulates social vulnerability using four themes (socioeconomic status, household characteristics, racial and ethnic minority status and housing type/ transportation) and 16 U.S. Census measures; to assist public health officials and local planners in identifying communities that may need support before, during or after disasters. **[https://www.atsdr.cdc.gov/placeandhealth/svi/fact_sheet/fact_sheet.html]**

- **Area Deprivation Index (ADI).** This index is a composite measure of 17 variables designed to describe socioeconomic disadvantage based on income, household characteristics and housing quality. Validated against U.S. Census data, ADI allows for ranking of neighborhoods by socioeconomic disadvantage in a region of interest. **[https://www.neighborhoodatlas.medicine.wisc.edu]**

- **Child Opportunity Index (COI).** This index is constructed of three domains that influence child development: education, health and environment and social and economic opportunity. Each domain contains subdomains, e.g., exposure to environmental pollutions or toxins. COI measures and maps the quality of these domains and subdomains to assess how children develop in the neighborhoods where they live. **[http://new.diversitydatakids.org/research-library/research-brief/what-child-opportunity?ga=2.201405783.737037980.1677868201-1349096108.1677868201].**

- **Pandemic Vulnerability Index (PVI).** This index comprises specific datasets ("components") across four major domains, including Infection Rate (transmissible cases, disease spread), Population Concentration (population mobility, residential density), Intervention Measures (vaccines, social distancing, testing), and Health & Environment (hospital beds, hospital ventilators, population demographics, air pollution, age distribution, comorbidities, health disparities). The two current models are 11.2 and 12.4, with the main difference between 11.2 and 12.4 being the inclusion of vaccine data in model 12.4. **[https://www.niehs.nih.gov/research/programs/coronavirus/covid19pvi/details/index.cfm]**

COVID-19 Positivity Rates Linkage Dataset

The COVID-19 Positivity Rates Linkage Dataset provides seven-day rolling positivity rates beginning January 2021 to present from the interagency White House COVID-19 Team. The rates are given for all counties represented by RADx-UP study participants. **[https://healthdata.gov/Health/COVID-19-Community-Profile-Report/gqxm-d9w9]**

COVID-19 Vaccination Rates Linkage Dataset

The COVID-19 Vaccination Rates dataset supplies daily vaccination rates from the CDC beginning January 2021 to present. The rates are given for all counties represented by RADx-UP study participants. **[https://data.cdc.gov/Vaccinations/COVID-19-Vaccinations-in-the-United-States-County/8xkx-amqh]**

Use the RADx-UP Linkage Datasets with the RADx-UP Core Analytic Datasets for area-level analyses such as:

- Assessing the relationship between neighborhood socioeconomic characteristics and willingness to receive COVID-19 vaccination.
- Value of area-level socioeconomic status based on income, education, and housing factors in predicting COVID-19 testing.
- Measuring COVID-19 outcome disparities among neighborhoods with varying access to healthcare and COVID-19 intervention measures.
- Exploring the association between environmental factors (e.g., air pollution) and COVID-19 testing
- Investigating whether population density in urban areas is associated with testing and vaccination for COVID-19 for black participants.
- Assessing whether the relationship between housing insecurity and COVID-19 testing varies according to area-level health and environmental factors.
- Exploring whether neighborhood-level educational opportunities for youth predict COVID-19 testing and vaccination behaviors among Latino/Latinx participants.
- Measuring the prevalence of comorbidities at the area-level in relation to participants' COVID-19 testing and vaccination behaviors.

Learn more

Visual presentations of each of the **RADx-UP Linkage Datasets** referenced above are available via the RADx-UP Area-Level Data Linkage found at **https://myhome.radx-up.org/area-data-linkage/**.
(You must sign in with an activated user account to view the report.)

The RADx-UP Area-Level Data Linkage displays RADx-UP project data mapped to public data sets sourced from the 2019 American Community Survey (ACS).