**Data columns for models 11.2.1 and 12.4:**

Name Model Type Source Description

AirPollution both static CHR Particulate matter raw value

Cases both\* dynamic USAFacts Cases

CountyCaseRate 11.2.1\* dynamic USAFacts 7-day case rate

CountyDeathRate 11.2.1\* dynamic USAFacts 7-day death rate

DaytimePopDensity both static ArcGIS2 DPOPDENSCY

Deaths both\* dynamic USAFacts Deaths

Diabetes both static CHR Diabetes prevalence raw value

DistancingGrade both dynamic Unacast Total grade converted to number

Mobility 11.2.1\* static ArcGIS2 X7001\_A (average travel)

Obesity both static CHR Adult obesity raw value

PctBeds 11.2.1 static HIFLD # Beds / CHR Population raw value

PctBeds 12.4 dynamic HHS-CPR % inpatient beds occupied

PctBlack both static CHR % Non-Hispanic Black raw value

PctCases 11.2.1\* dynamic USAFacts Cases / CHR Population raw value

PctDeaths 11.2.1\* dynamic USAFacts Deaths / Cases

PctDeaths2 11.2.1\* dynamic USAFacts Deaths / CHR Population raw value

PctGE65 both static SVI EP\_AGE65

PctNative both static CHR % American Indian & Alaska Native raw value

PctNoIns both static ArcGIS1 B27010\_calc\_pctNoInsE

PctVentilators 12.4 dynamic HHS-CPR % ventilators in use

PrematureDeath both static CHR Premature death raw value

Sick both dynamic USAFacts (Cases[day] – Cases[day-14]) / CHR Pop \* 1000

Smoking both static CHR Adult smoking raw value

Spread both dynamic USAFacts (Cases[day] – Cases[day-14]) / Cases[day]

StateCaseRate 11.2.1\* dynamic USAFacts 7-day case rate

StateDeathRate 11.2.1\* dynamic USAFacts 7-day death rate

StatePctTested 11.2.1 dynamic HHS-T # Tests / CHR Population raw value

StateTestRate 11.2.1\* dynamic HHS-T 7-day testing rate

SVIHousing both static SVI RPL Theme 4

SVIMinority 11.2.1\* static SVI RPL Theme 3

SVISocioeconomic both static SVI RPL Theme 1

Testing 12.4 dynamic HHS-CPR RT-PCR tests per 100k – last 7 days

Traffic both static CHR Traffic volume raw value

Vaccines 12.4 dynamic HHS-CPR 1 - % vaccinated population

Notes:

\* Indicates presence in model data file but not used when computing PVI score.

Rate computations are (x[day] / x[day - n])^(1/n) for n-day change

**Data sources:**

ArcGIS1 [ArcGIS map with American Community Survey data (Insurance)](https://www.arcgis.com/home/item.html?id=02a82293e2dd475391cb3699b5e82d61)

ArcGIS2 [ArcGIS map with American Community Survey data (Travel)](https://www.arcgis.com/home/item.html?id=88f17b4580e846609f92c9f75a9d9eee)

CHR [County Health Rankings (2020)](https://www.countyhealthrankings.org/explore-health-rankings/rankings-data-documentation) (Note: 2021 data now available but not used)

HHS-CPR [HHS Community Profile Reports](https://beta.healthdata.gov/Health/COVID-19-Community-Profile-Report/gqxm-d9w9)

HHS-T [HHS State-level PCR testing results timeseries](https://beta.healthdata.gov/dataset/COVID-19-Diagnostic-Laboratory-Testing-PCR-Testing/j8mb-icvb)

HIFLD [Homeland Infrastructure Foundation-Level Data (Hospitals)](https://hifld-geoplatform.opendata.arcgis.com/datasets/6ac5e325468c4cb9b905f1728d6fbf0f_0)

SVI [Social Vulnerability Index (2018)](https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html)

Unacast [Unacast social distancing scoreboard](https://www.unacast.com/covid19/social-distancing-scoreboard)

USAFacts [USAFacts.org covid count data](https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/)

**Model 12.4 imputation:**

PctBeds and PctVentilators missing data are imputed as the mean of the 8 geographically nearest counties (based on centroid coordinates) that have valid data.

Vaccines missing data imputation has several steps.

1) County level data is available and used beginning 4/12/2021

2) Missing county data (and all data prior to 4/12) is imputed first from the "States" data sheet, column "People who are fully vaccinated as % of total population"

3) If that state data column isn't available, column "People initiating vaccination as % of adult population" will be used instead

**Model generation:**

Models are generated nightly (~10 p.m. ET) using the most recently available data. However, data streams are not always up to date, so a weekly refresh is done to the GitHub site early Sunday a.m. and then the dashboard incorporates those changes Sunday night. The refreshed models will use data from the prior day, e.g., a model for 5/19 will use dynamic data from 5/18.