Deloitte.

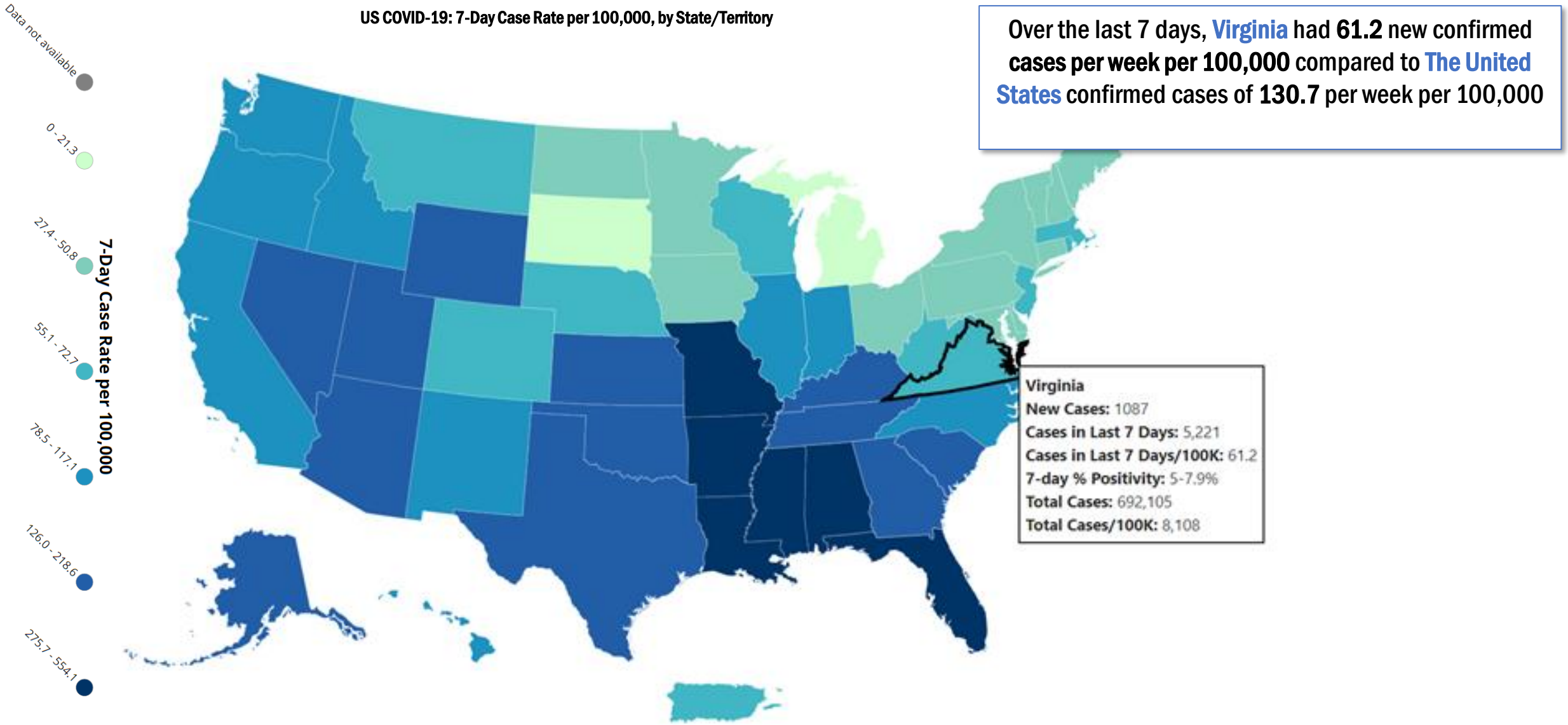
VDH VIRGINIA DEPARTMENT OF HEALTH

COVID-19 Surveillance Data Update

July 29, 2021

National: Weekly New Cases per 100k

Updated 07/28

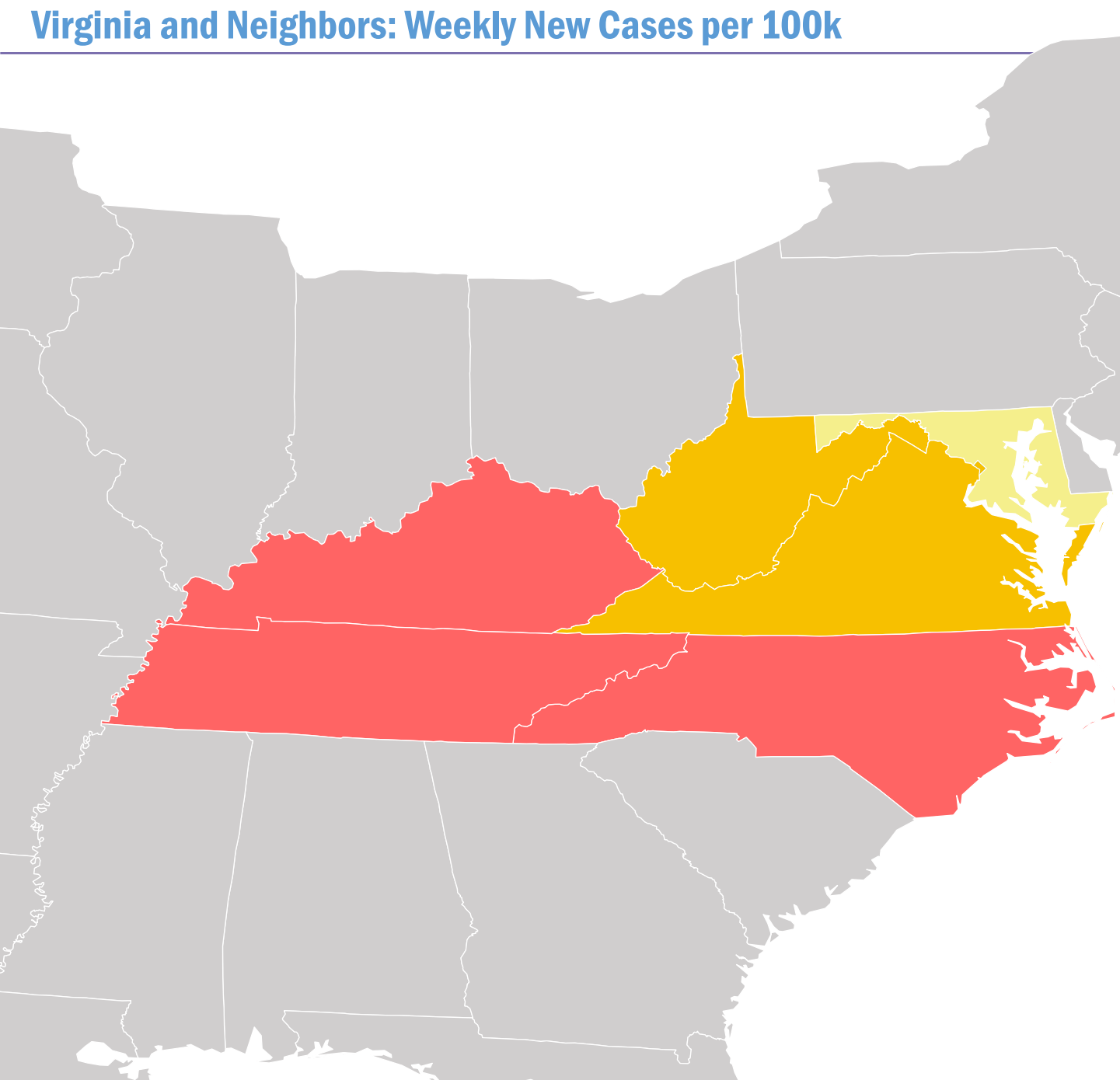


Over the last 7 days, Virginia had **61.2** new confirmed **cases per week per 100,000** compared to The United States confirmed cases of **130.7** per week per 100,000

Source: CDC COVID Data Tracker

Virginia and Neighbors: Weekly New Cases per 100k

Updated 07/28



Over the last 7 days, Virginia had **61.2** (+50%) new confirmed **cases per week per 100k**

Rates Higher than Virginia:

Kentucky, **139.1** (+75%)
Tennessee, **126.0** (+36%)
North Carolina, **117.1**, (+68%)

Rates Lower than Virginia:

West Virginia, **57.9** (+11%)
District of Columbia, **56.8** (+39%)
Maryland, **36.3** (+60%)

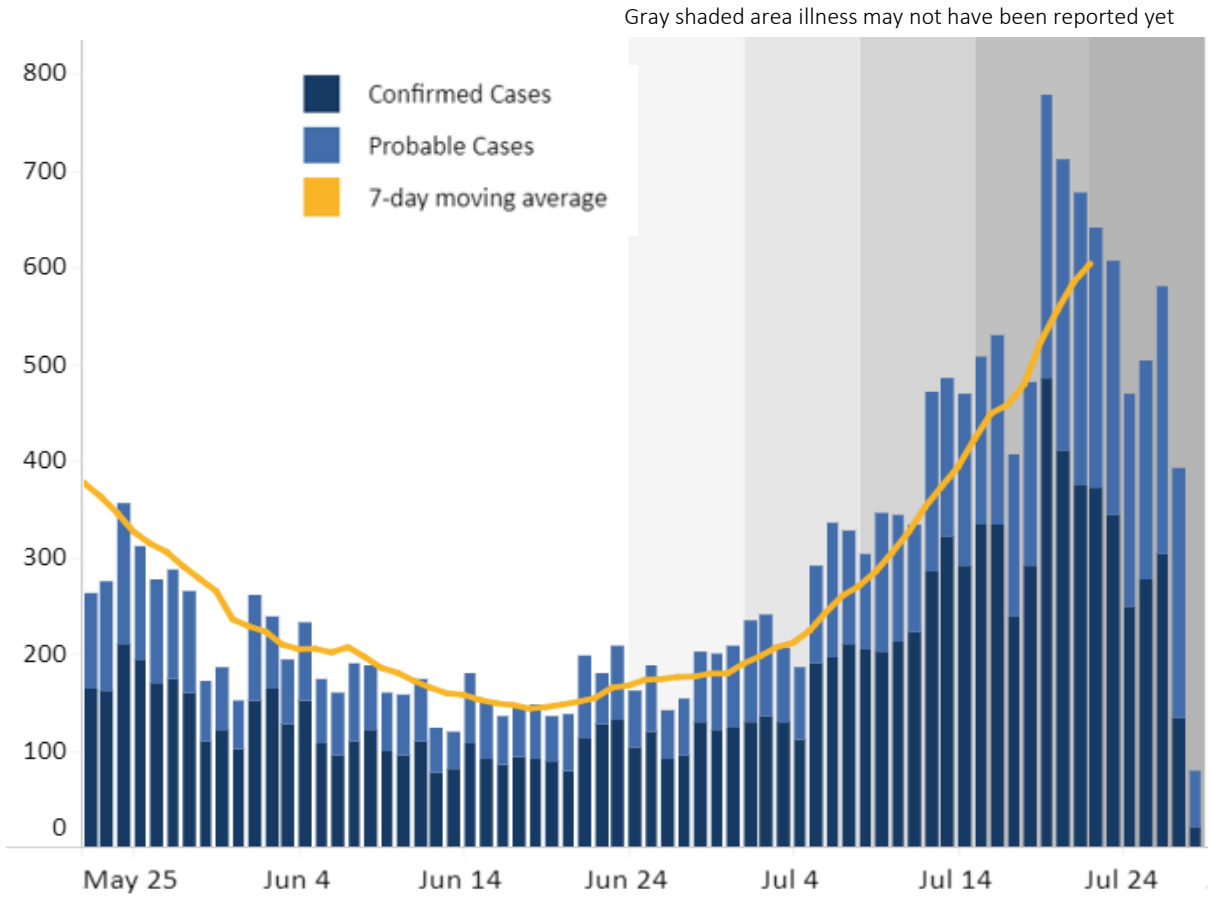
Legend	New cases per 100k population per week
Dark Green	≤ 4
Light Green	5-9
Yellow	10-49
Orange	50-99
Light Red	100-199

Source and thresholds provided by CDC, CDC COVID Data Tracker

Virginia: Cases, Hospitalizations, and Deaths

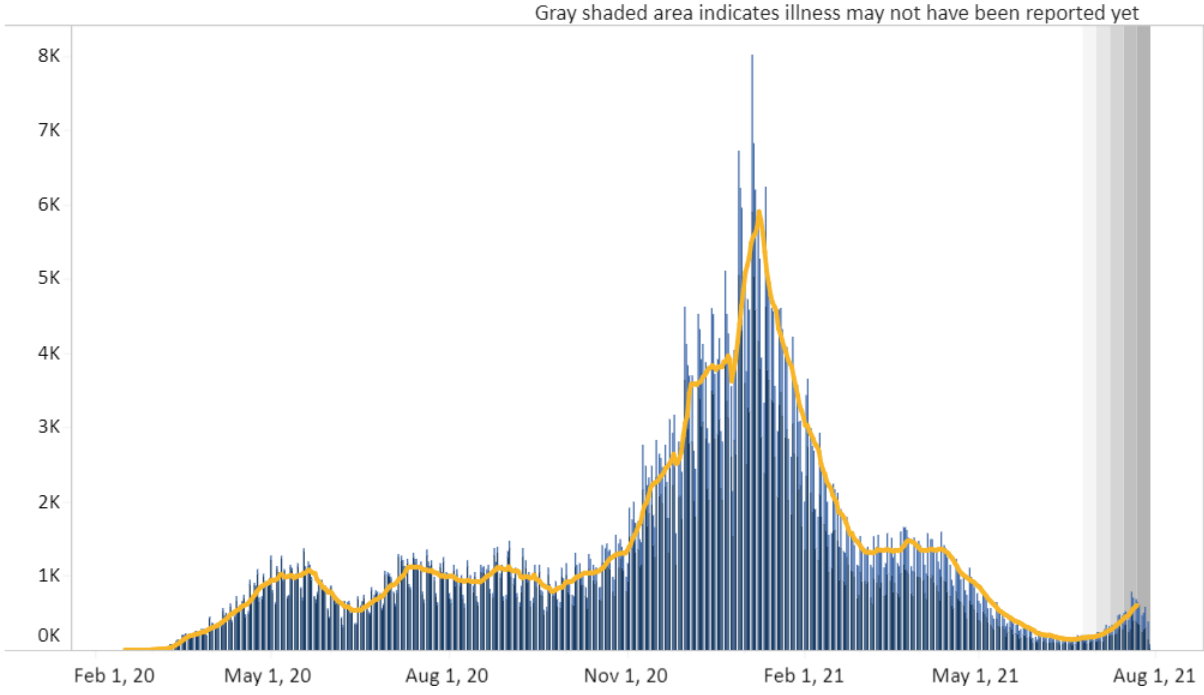
Updated 07/29

Cases by Date of Symptom Onset, last 60 days



- Compared to last week, **cases** increased to 808 (7-day MA) per day (+62%)
  - 37% lower than the mid-March low of 2021
  - 58% higher than the summer low of 2020
  - 526% higher than the Mid-June low of 2021
- **Hospitalizations** increased to 431per day (+37%)
- **Deaths** increased to 4.6 per day (+106%)

All Reporting Timeline



Source: Cases – Coronavirus (virginia.gov), Key Measures – Coronavirus (virginia.gov)
Data represent a 7-day moving average

Virginia: Regional Metric Summary

Updated 07/29

Metrics date: 07/29/2021

	Central	Eastern	Far Southwest	Near Southwest	Northern	Northwest
New cases per 100k within the last 7 days	84.8 ↑	80.7 ↑	71.9 ↑	72.0 ↑	47.8 ↑	56.1 ↑
% Positivity 7-day moving average	5.1% ↑	7.2% ↑	6.7% ↑	7.8% ↑	3.1% ↑	4.6% ↑
COVID-like ED visits rate per 100k	9.2 ↑	8.4 ↑	6.9 ↓	8.9 ↑	4.0 ↑	5.2 ↑
COVID-like ICU Hospitalizations rate per 100k	0.0 ↓	0.0 ↓	0.0 ↓	0.0 ↓	0.0 ↓	0.0 ↓

Burden	Level 0	Level 1	Level 2	Level 3	Level 4
New Cases	<10	10-49		50-100	>100
% Positivity	<3	3-5	5-8	8-10	>10
CLI ED Visits	<4		4-5.9		≥6
CLI ICU Hos.	<3.5				≥3.5

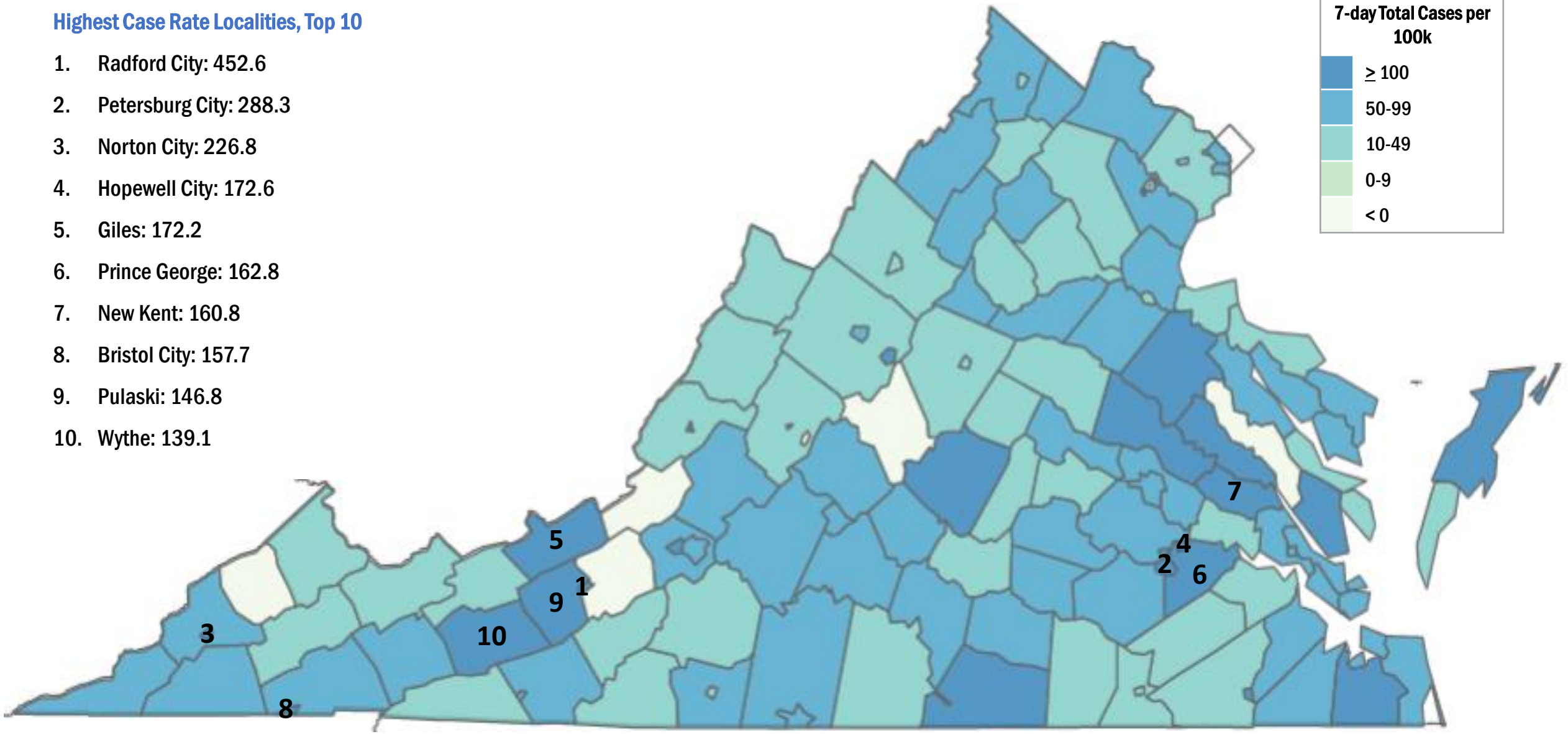
Source: Region Metrics – Coronavirus
Data represents a 7-day moving average, trends compared to 1 week ago

Virginia: Weekly Total of Cases per 100k by Locality

Updated 07/29

Highest Case Rate Localities, Top 10

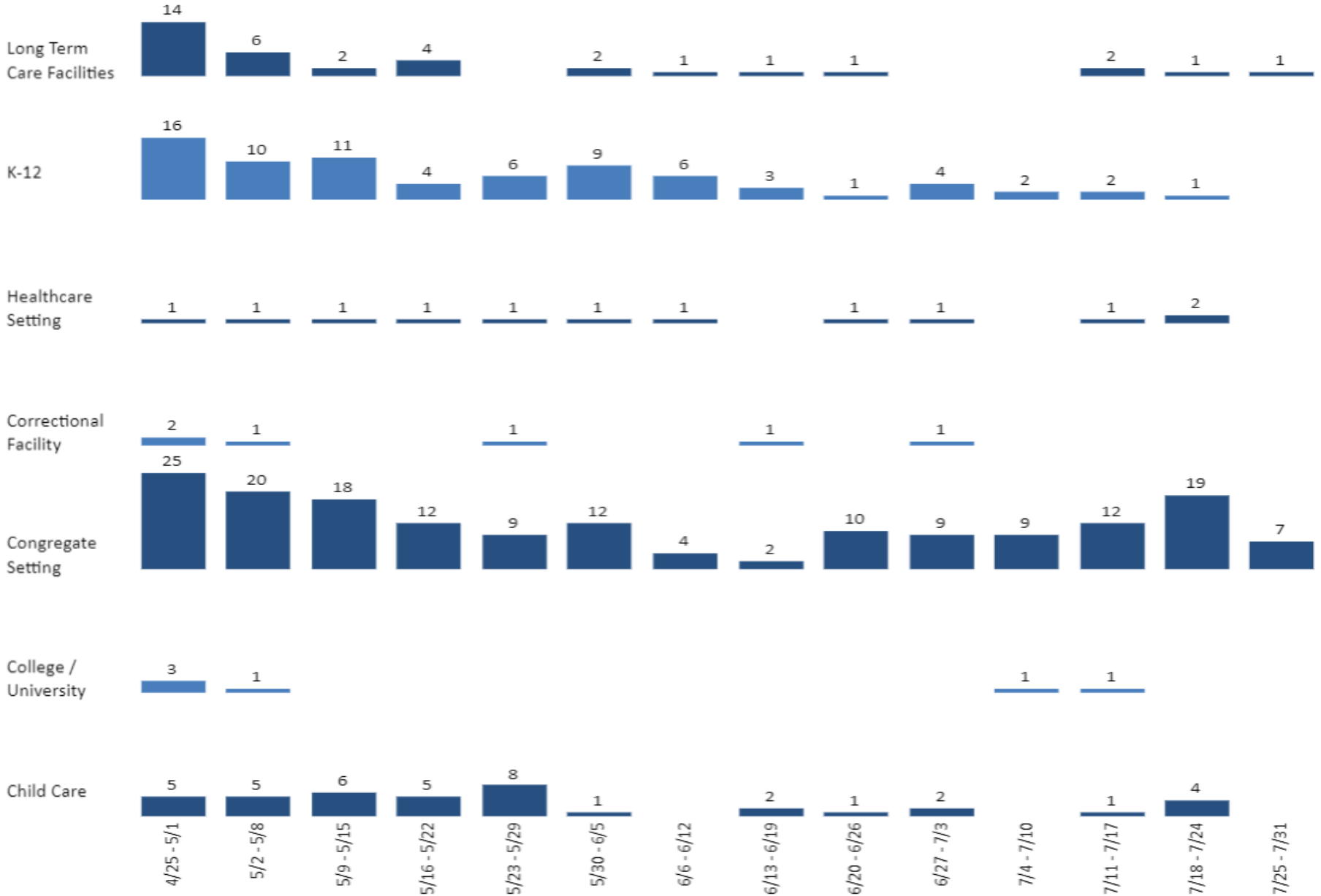
1. Radford City: 452.6
2. Petersburg City: 288.3
3. Norton City: 226.8
4. Hopewell City: 172.6
5. Giles: 172.2
6. Prince George: 162.8
7. New Kent: 160.8
8. Bristol City: 157.7
9. Pulaski: 146.8
10. Wythe: 139.1



Source: Locality Metrics – Coronavirus (virginia.gov)

Virginia: Number of Outbreaks by Facility Type, last 13 weeks

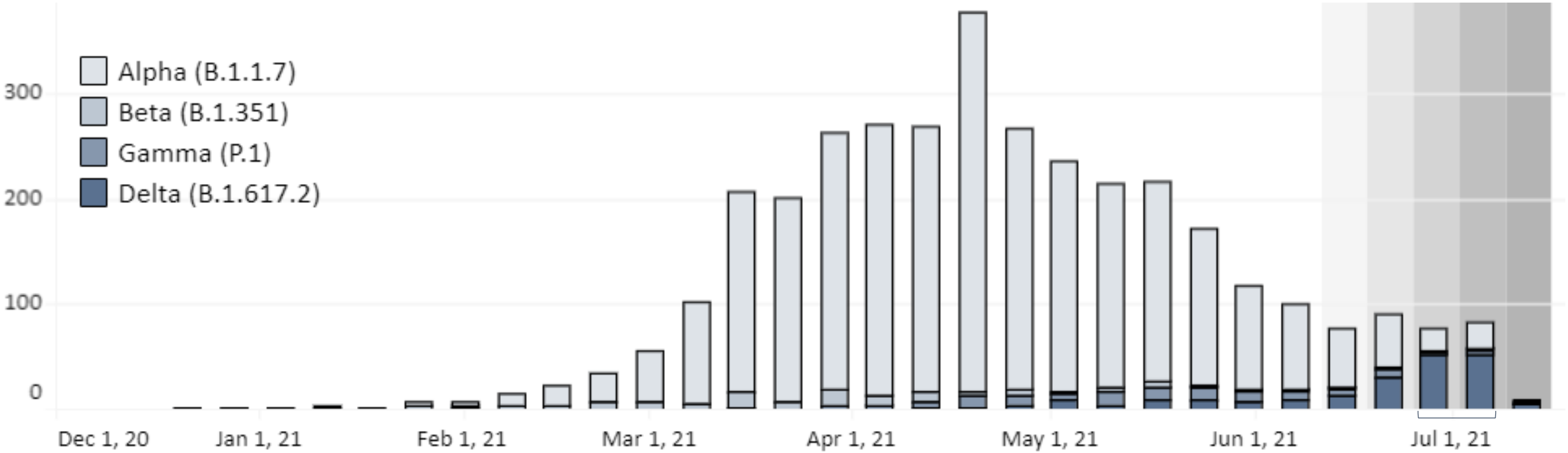
Updated 07/29



Sources: [Outbreaks – Coronavirus (virginia.gov)]

Number of Variant of Concern Infections Reported to VDH by Week

Updated 07/23



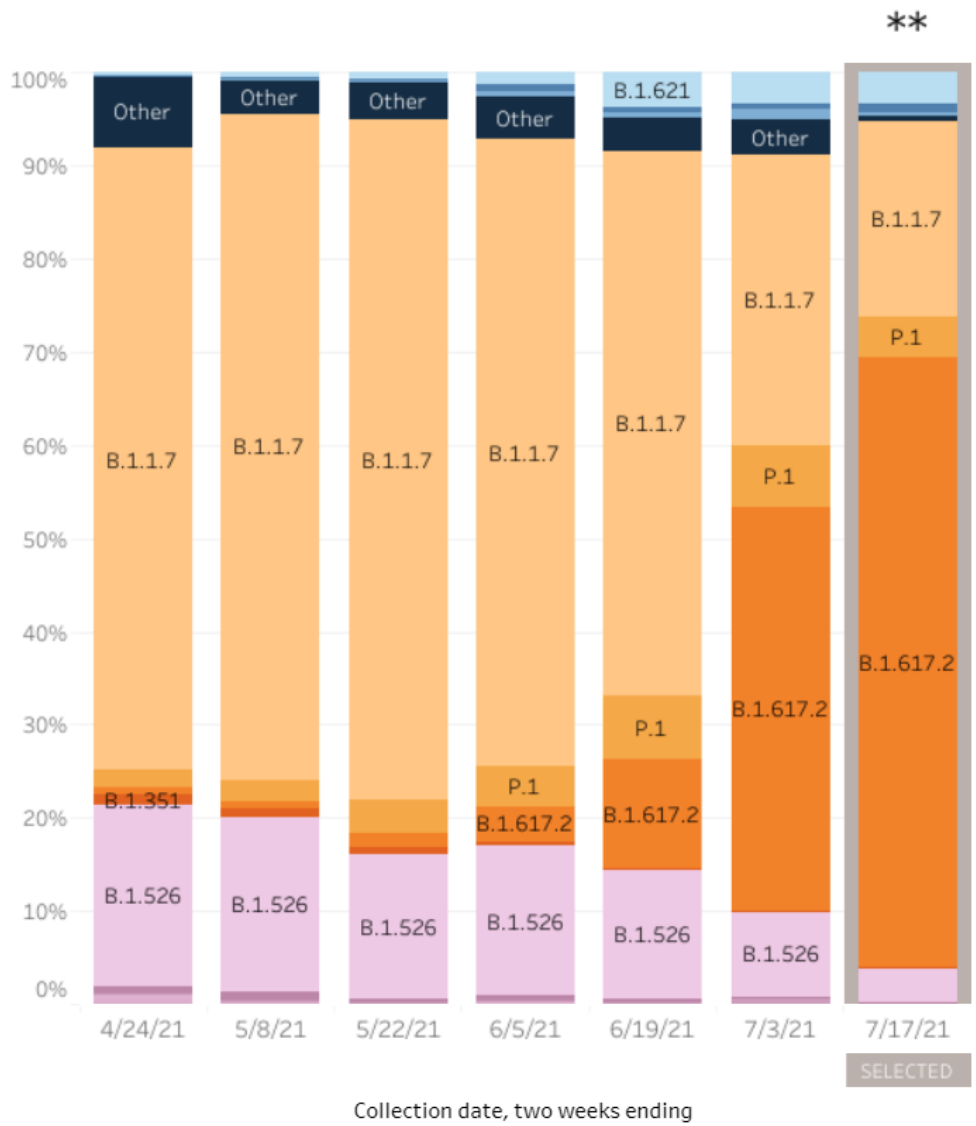
	Week Ending 6/26/2021	Week Ending 7/3/2021	Percent Change
Alpha	28.2%	31.0%	+9.9%
Beta	0%	0%	0%
Gamma	3.8%	5.9%	+28.9%
Delta	68.0%	63.1%	-7.2%

Sources: Variants of Concern – Coronavirus (virginia.gov), Data updated on Fridays

Virginia Region: CDC Estimated Proportions of SARS-CoV-2 Lineages

Updated 07/27

HHS Region 3: 4/11/2021 – 7/17/2021



HHS Region 3: 7/4/2021 – 7/17/2021 NOWCAST

Region 3 - Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia

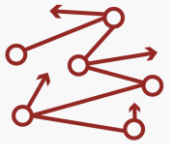
Lineage		Type		%Total	95%PI
B.1.617.2	Delta	VOC	65.6%	51.1-80.0%	
B.1.1.7	Alpha	VOC	21.0%	8.9-33.3%	
P.1	Gamma	VOC	4.3%	0.0-11.1%	
B.1.526	Iota	VOI	3.6%	0.0-8.9%	
B.1.621			3.4%	0.0-8.9%	
B.1.621.1			1.0%	0.0-4.4%	
B.1.628			0.4%	0.0-2.2%	
B.1.351	Beta	VOC	0.2%	0.0-2.2%	
B.1.525	Eta	VOI	0.1%	0.0-2.2%	
B.1.617.3		VOI	0.0%	0.0-2.2%	
B.1.427	Epsilon	VOI	0.0%	0.0-2.2%	
B.1.429	Epsilon	VOI	0.0%	0.0-2.2%	
Other			0.5%	0.0-4.4%	

* Other represents lineages each circulating at <1% of viruses over the last 4 weeks of weighted data.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# Sublineages of P.1 and B.1.351 (P.1.1, P.1.2, B.1.351.2, B.1.351.3) are aggregated with the parent lineage and included in parent lineage's proportion. AY.1, AY.2, and AY.3 are aggregated with B.1.617.2.

Sources: CDC COVID Data Tracker, Data updated on Tuesdays, ** These data include Nowcast estimates, which are modeled projections

Recent Literature of Possible Interest to VDH

Lavine et al. extended and updated their estimates of the long-term transition of COVID to endemicity



- Based on reinfections in the second wave in Manaus, Brazil and other data sources, the authors estimated when a population will be sufficiently vulnerable for a new wave and the number of deaths associated with a wave
- Future waves will likely have diminishing fatalities, but COVID deaths could remain very high for many years without substantial immunity through periodically reformulated vaccines
- To improve policymaking, they recommend monitoring the severity of reinfections and infections post-vaccination

Joudrey et al. looked at methadone access during the pandemic

- The authors surveyed 241 opioid treatment facilities in 14 jurisdictions to understand how access changed
- 26 percent were not able to offer appointments when contacted by the research team
- Roughly half responded to the pandemic by increasing telemedicine and a third allowed take-home medicine
- This decline in access to care may have contributed to the substantial increase in opioid overdoses documented during the pandemic, but further study is needed to understand which responses were most effective

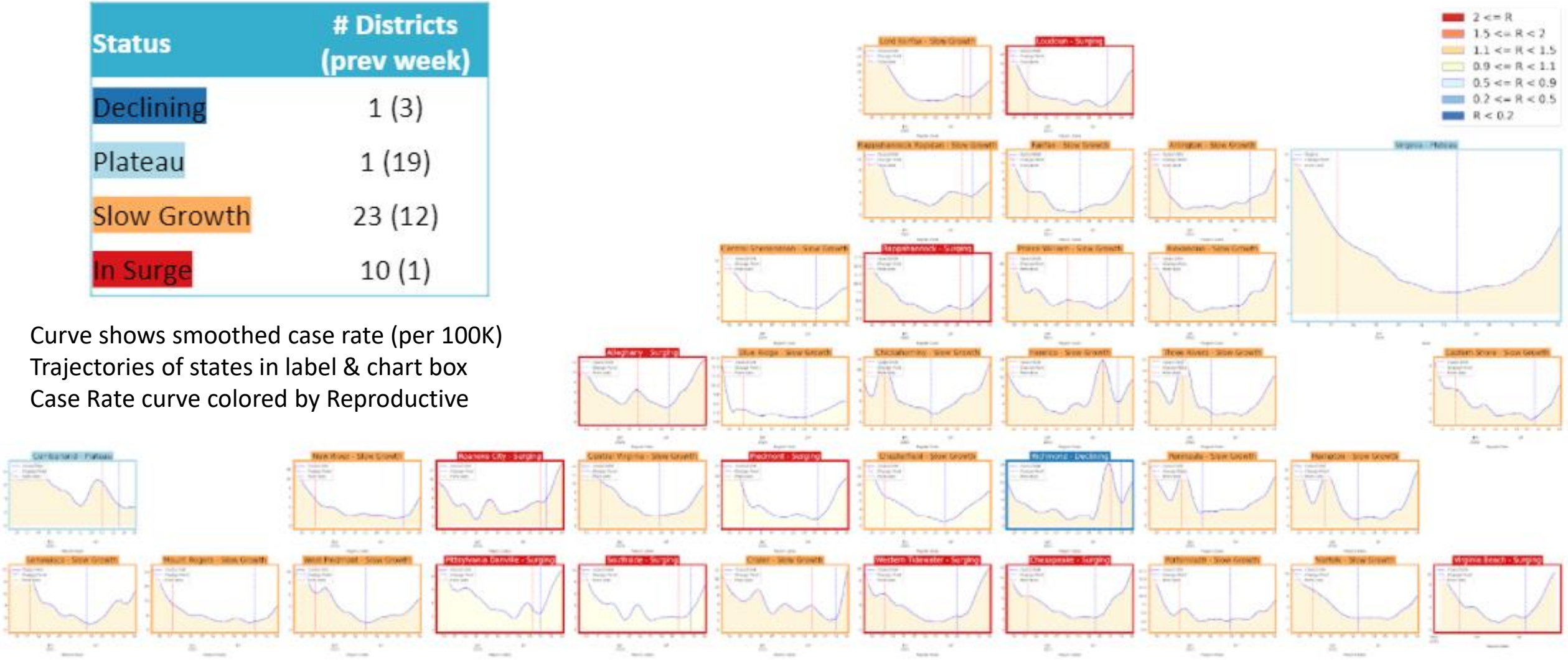
Lucia-Sanz et al. modeled the role that different types of immunity play in long-term care facilities

- Long-term care facilities were disproportionately affected by COVID, and the mortality rate among residents was substantially higher than in the general population
- In particular, the authors explore the use of “shield immunity,” which is when those without natural or vaccine-acquired immunity (e.g., immuno-compromised residents) exclusively or primarily interact with those with some form of immunity (e.g., vaccinated staff and family)
- Using a network model of COVID spread, they find that a shield immunity strategy can dramatically reduce spread in long-term care facilities

UVA Modeling: District Trajectories, last 10 weeks

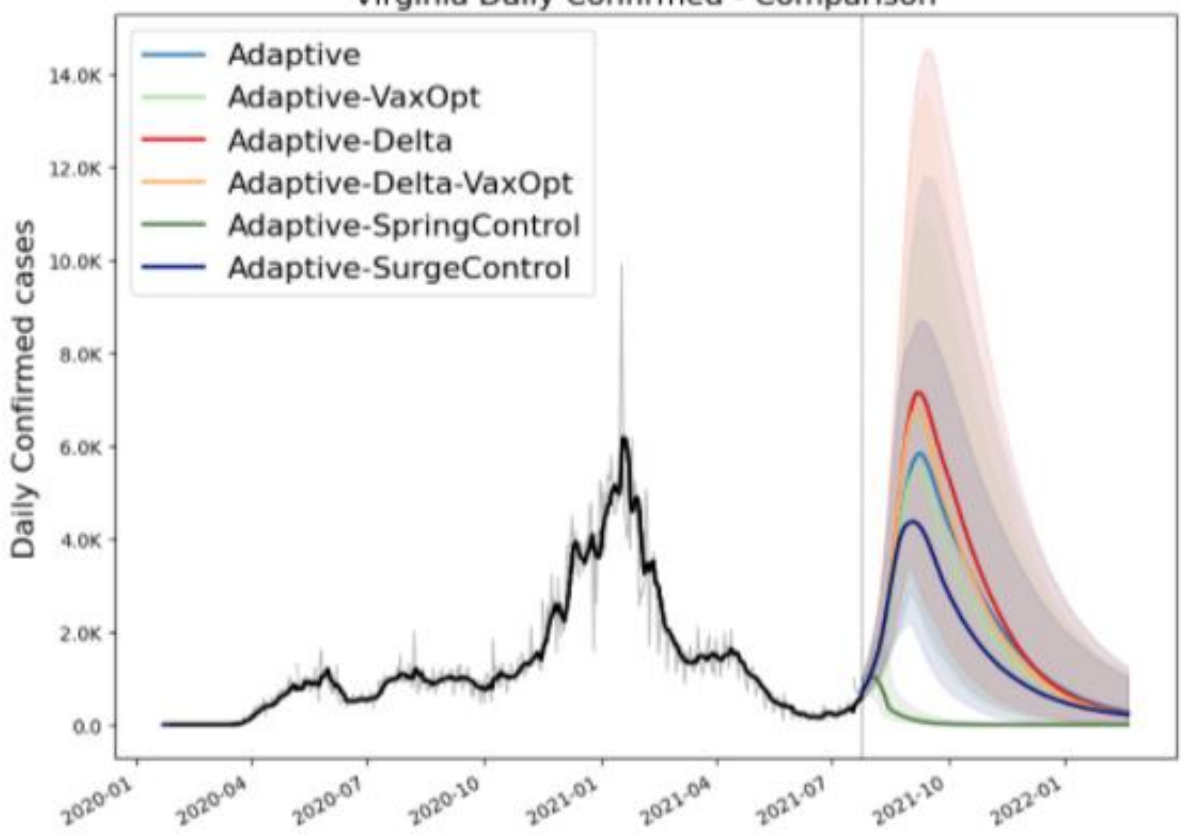
Status	# Districts (prev week)
Declining	1 (3)
Plateau	1 (19)
Slow Growth	23 (12)
In Surge	10 (1)

Curve shows smoothed case rate (per 100K)
Trajectories of states in label & chart box
Case Rate curve colored by Reproductive

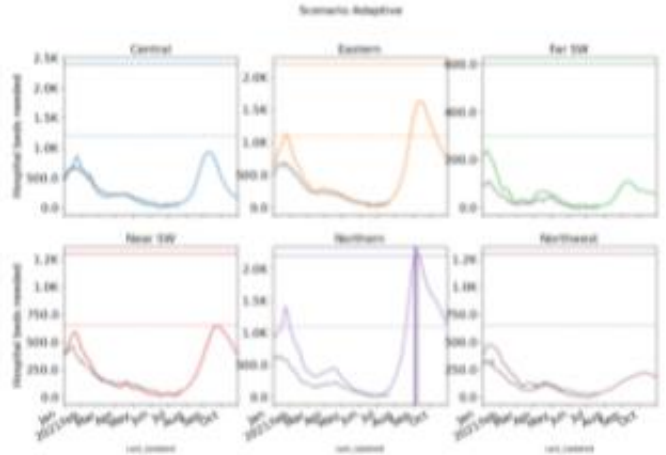


UVA Modeling: Outcome Projections

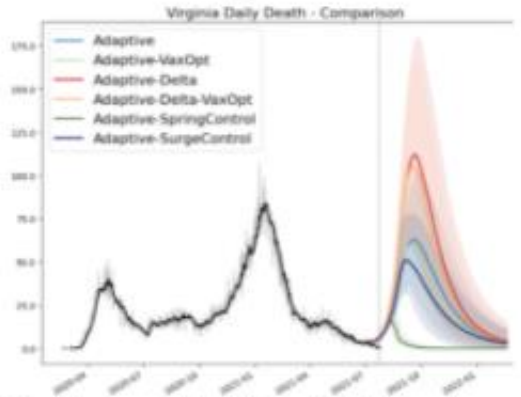
Confirmed cases



Estimated Hospital Occupancy

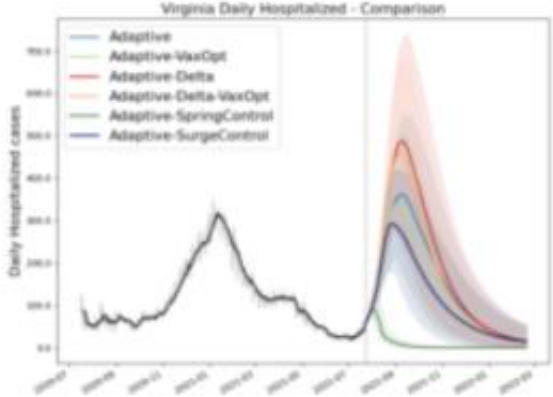


Daily Deaths



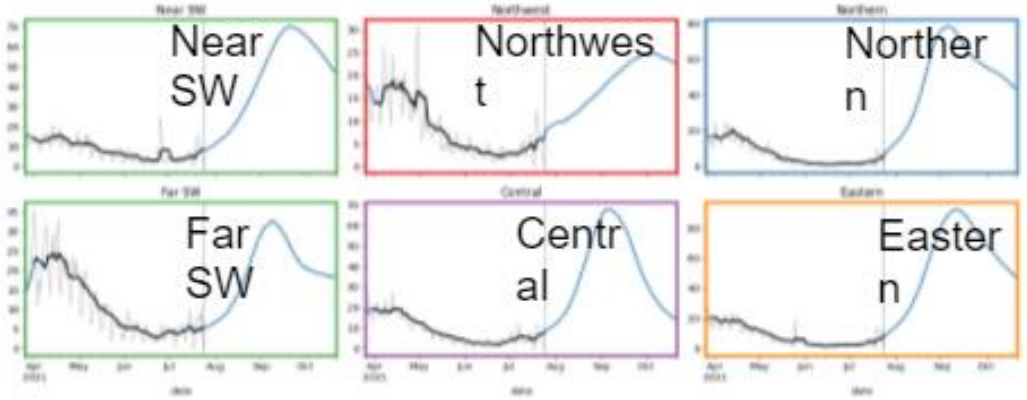
Death ground truth from VDH "Event Date" data, most recent dates are not complete

Daily Hospitalized

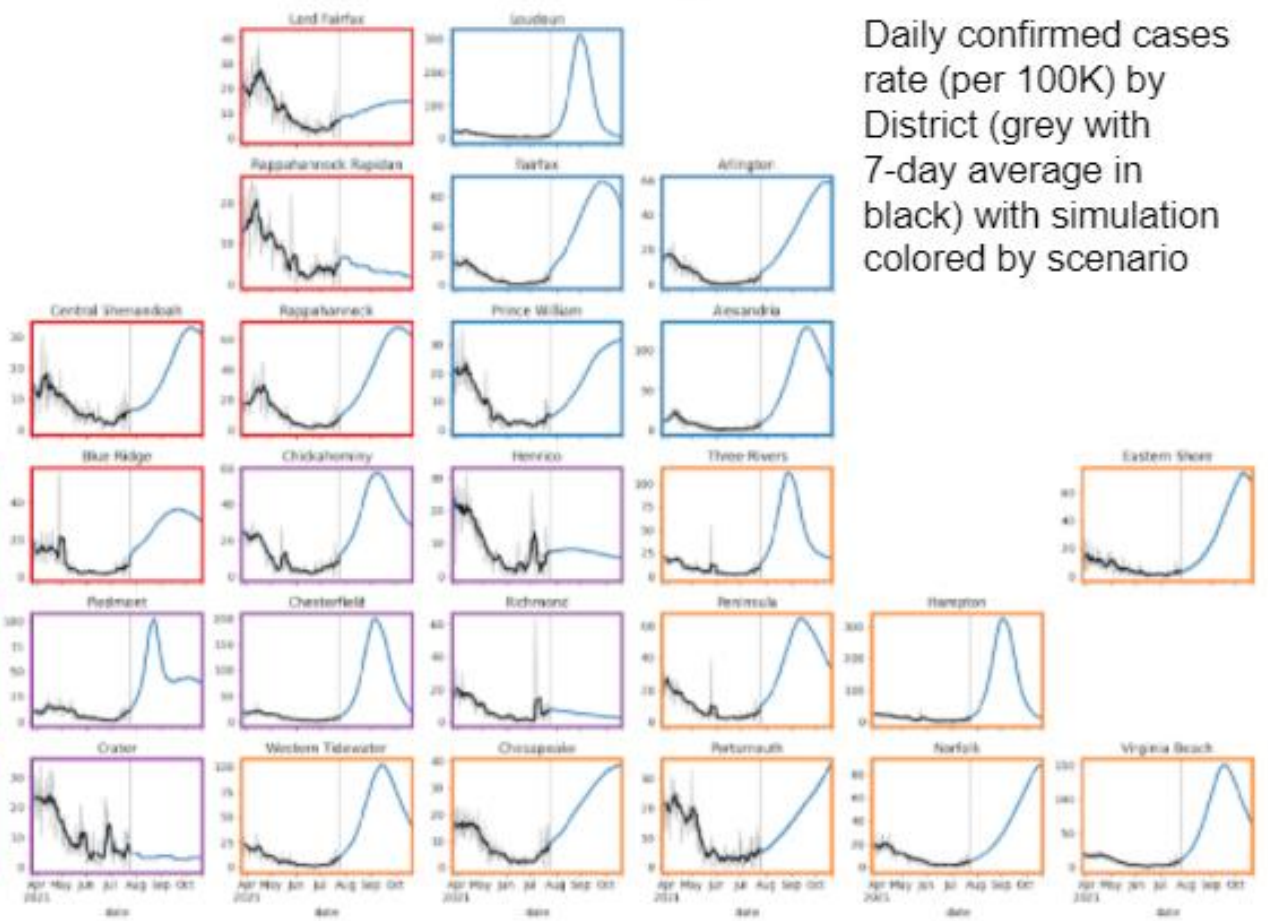


UVA Modeling: District Projections, Adaptive

Projections by Region



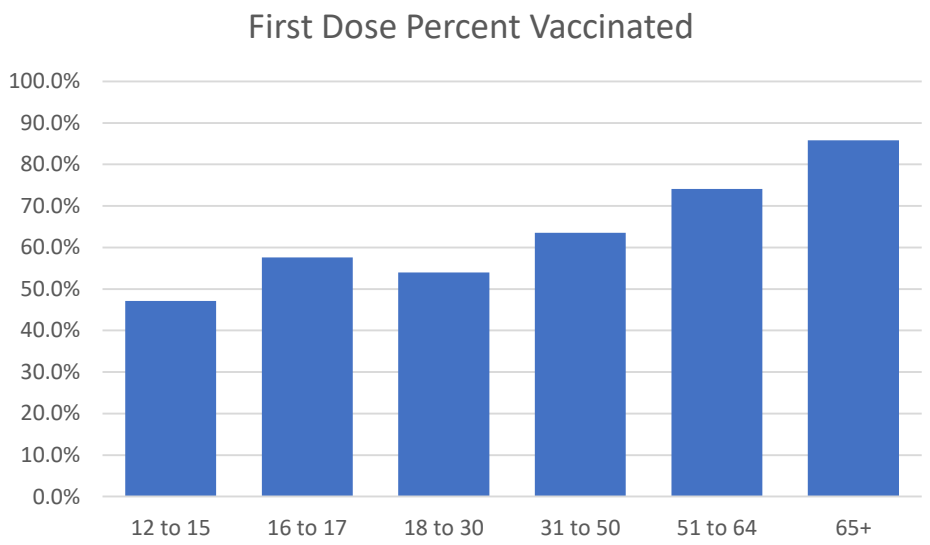
Projections by District

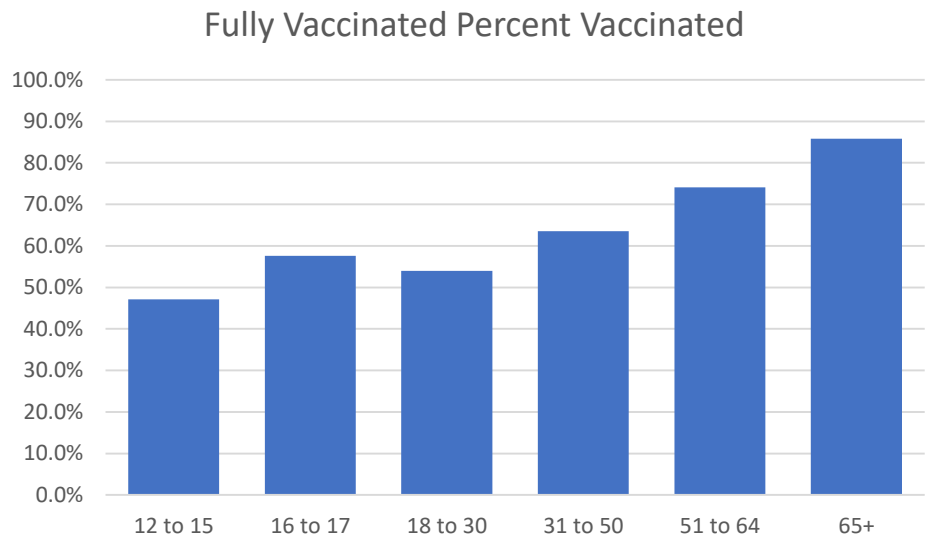


Daily confirmed cases rate (per 100K) by District (grey with 7-day average in black) with simulation colored by scenario

Virginia: Vaccination by Age Groups

Updated 07/28





Virginia Vaccination by Age

- ✓ **71.7%** of the Adult (18+) Population Vaccinated with at Least One Dose
- ✓ **64.7%** of the Adult (18+) Population Fully Vaccinated
- ✓ **85.7%** of Virginians 65+ and **50.3%** of 12 to 17 year olds have received at least one dose

Metaculus Forecast for Herd Immunity:

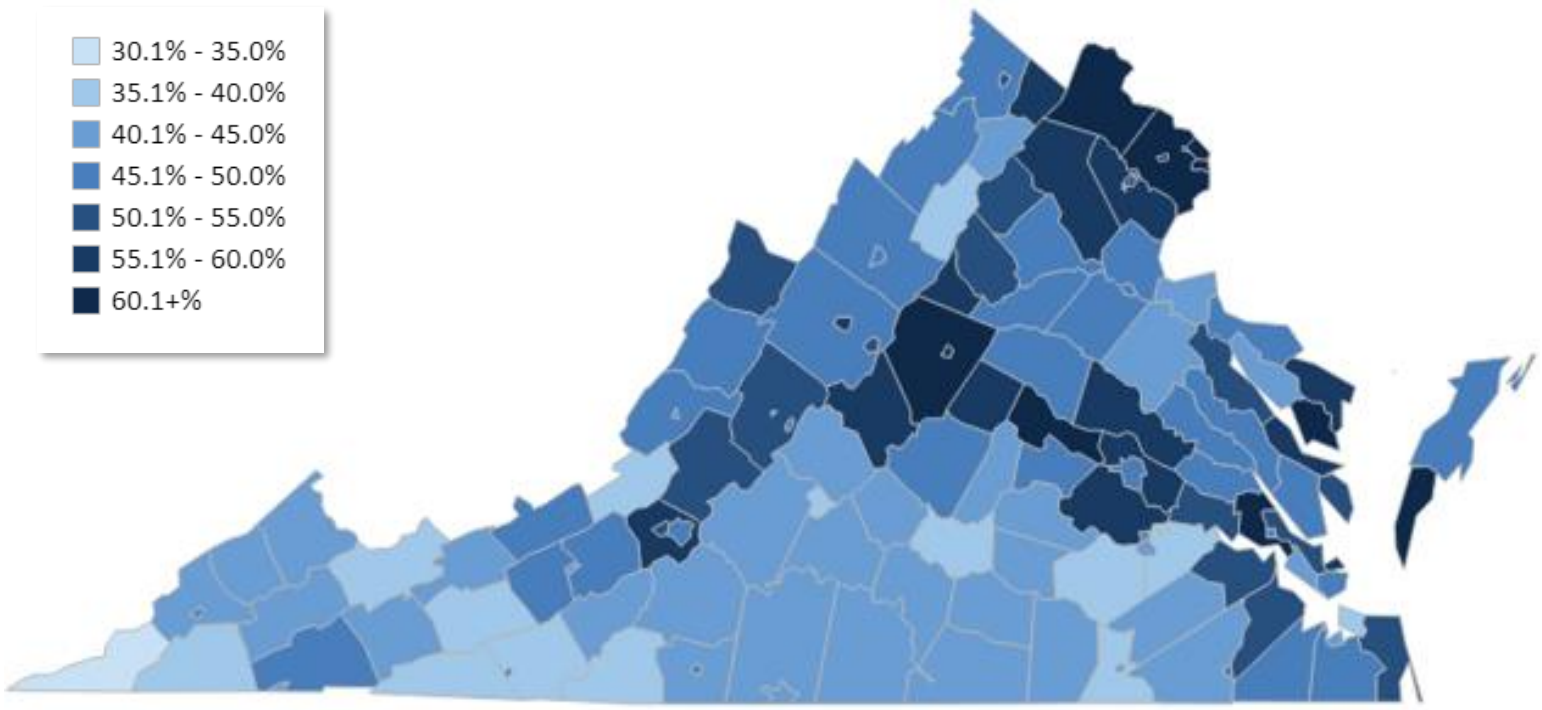
- Median Metaculus forecast for when 75% of all Virginians will have received at least one vaccine dose is **April 2022**
- The Interquartile range for the Metaculus forecast is Dec 2021 to July 2023.

Source: COVID-19 in Virginia: Vaccine Summary, Keep Virginia Safe Tournament | Metaculus

Virginia: Vaccination across the Commonwealth

Updated 07/28

Percent of the Total Population with at Least One Dose by Locality



The population with at least one dose varies by locality

- 11 localities have more than 60 percent of their total population vaccinated
- 16 localities have less than 40 percent of their total population vaccinated

Community immunity is estimated to require a vaccination rate around 70 to 80 percent for the total population, but could be higher with the emerging Delta Variant

Regional Disparities in Vaccinations Remain Prevalent

Region Name	First Dose Vaccination
Central	50.6%
Eastern	46.2%
Northern	60.1%
Northwest	49.6%
Southwest	43.4%

Federal doses not included in this number

Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)

Virginia: Vaccination by Race and Ethnicity

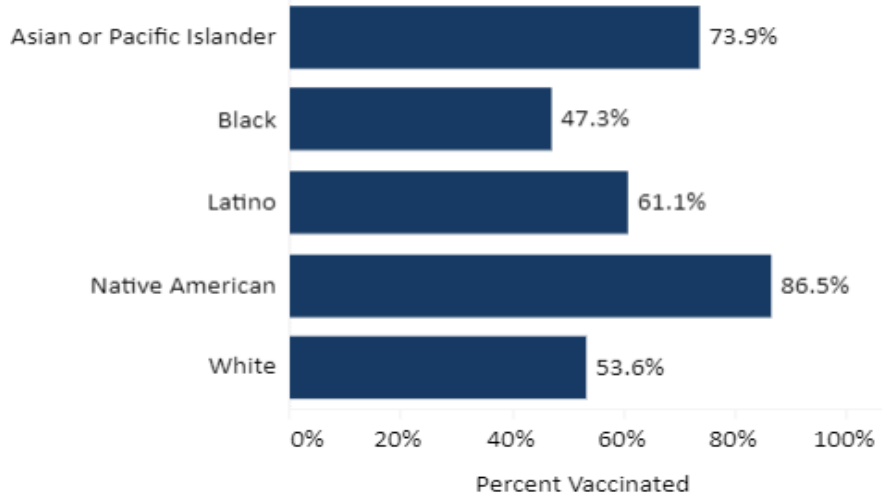
There are Varying Rates of Vaccination across Race/ Ethnicity groups

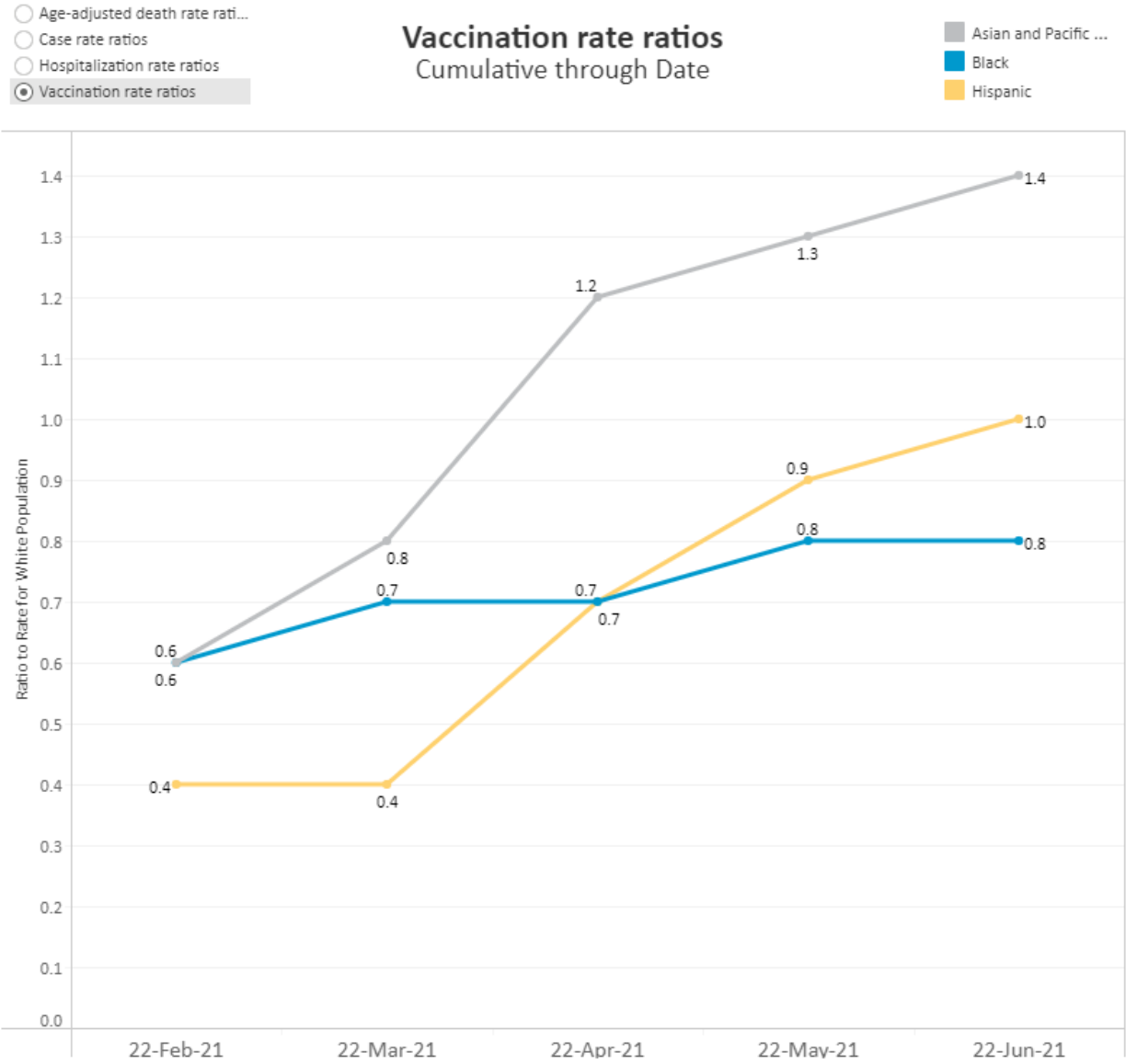
- Native Americans (86.5%) and Asian or Pacific Islanders (73.9%) have the highest rates of vaccination
- Black Virginians have the lowest rate of vaccinations at 47.3%

Vaccination Rate Ratios show Changing Rates of Minority Vaccinations vs Whites

- Blacks have been vaccinated at 0.8 per White person
- Latinos have been vaccinated at 1.0 per White person

First Dose Vaccination Rate by Race / Ethnicity





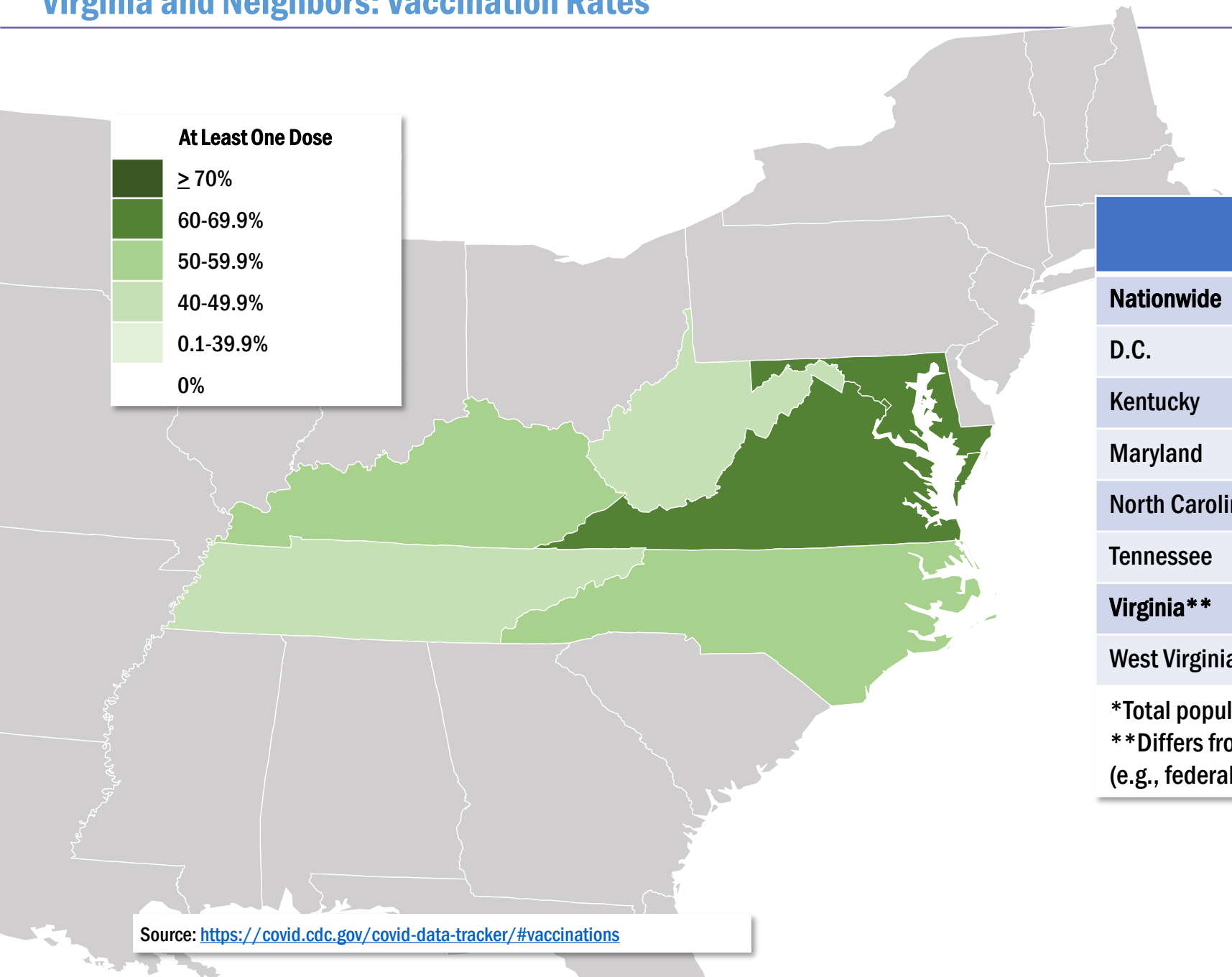
Ratios are in comparison to the same rate for the White population. For instance a ratio of 2.00 indicates a rate of twice the White population, while a ratio of 0.50 indicates a rate of half the White population

Federal doses not included in this number

Source: [COVID-19 Vaccine Demographics – Coronavirus (virginia.gov)]

Virginia and Neighbors: Vaccination Rates

Updated 07/27



	Partially Vaccinated*	Fully Vaccinated*
Nationwide	**7.7%**	**49.2%**
D.C.	9.1%	54.5%
Kentucky	6.2%	45.3%
Maryland	5.7%	58.5%
North Carolina	7.2%	43.5%
Tennessee	5.3%	38.9%
Virginia**	**7.0%**	**54.2%**
West Virginia	6.9%	39.0%

*Total population, includes out-of-state vaccinations
**Differs from previous slide because all vaccination sources (e.g., federal) are included

Source: https://covid.cdc.gov/covid-data-tracker/#vaccinations