Deloitte.

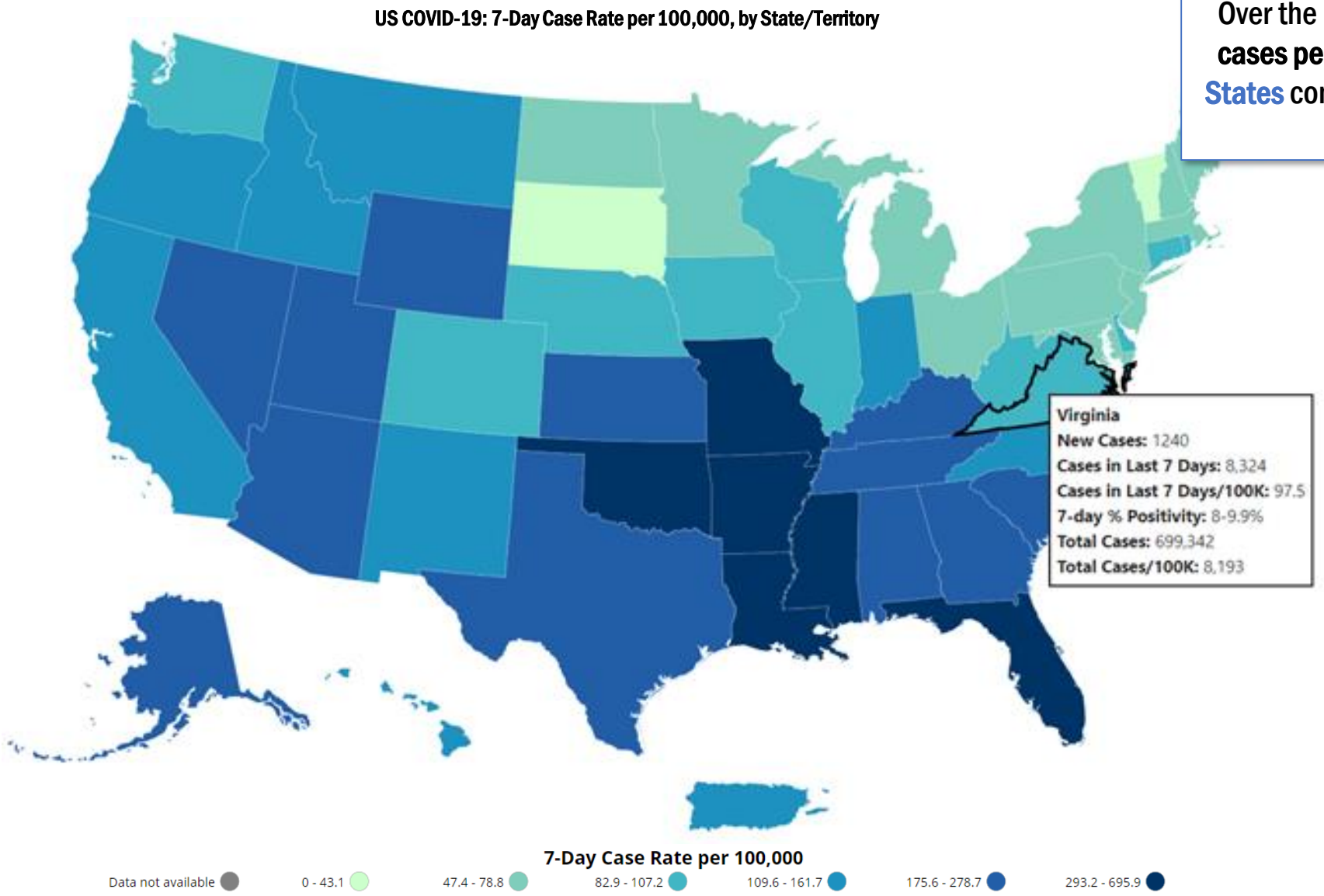
VDH VIRGINIA DEPARTMENT OF HEALTH

COVID-19 Surveillance Data Update

August 4, 2021

National: Weekly New Cases per 100k

Updated 08/03

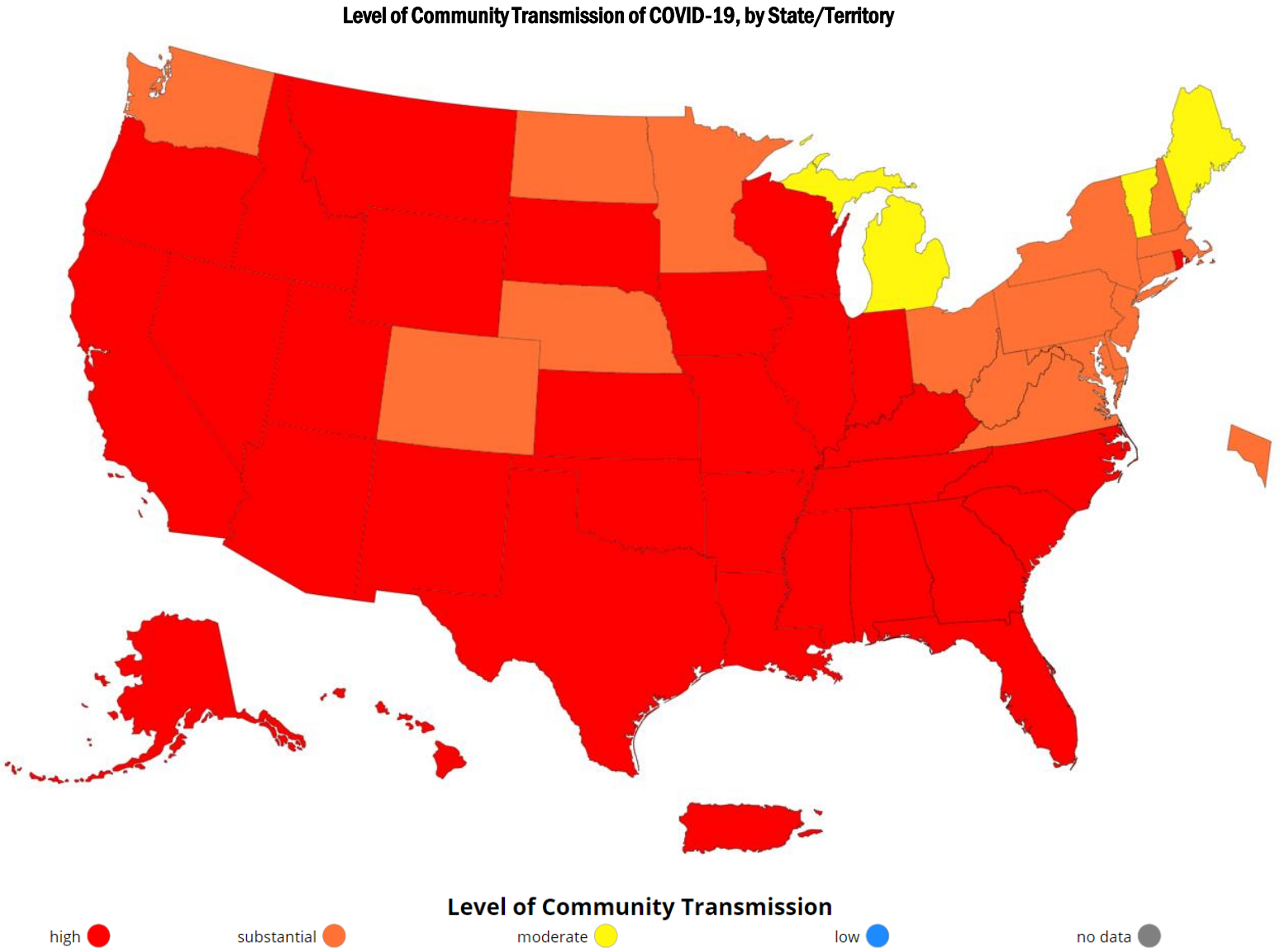


Over the last 7 days, Virginia had **97.5** new confirmed **cases per week per 100,000** compared to The United States confirmed cases of **177.9** per week per 100,000

Source: CDC COVID Data Tracker

National: Community Transmission Levels

Updated 08/03



	Cases in the Last 7 Days Per 100k Population
Virginia	97.5
U.S.	177.9
Louisiana	695.9
Florida	574.6
Arkansas	441.0

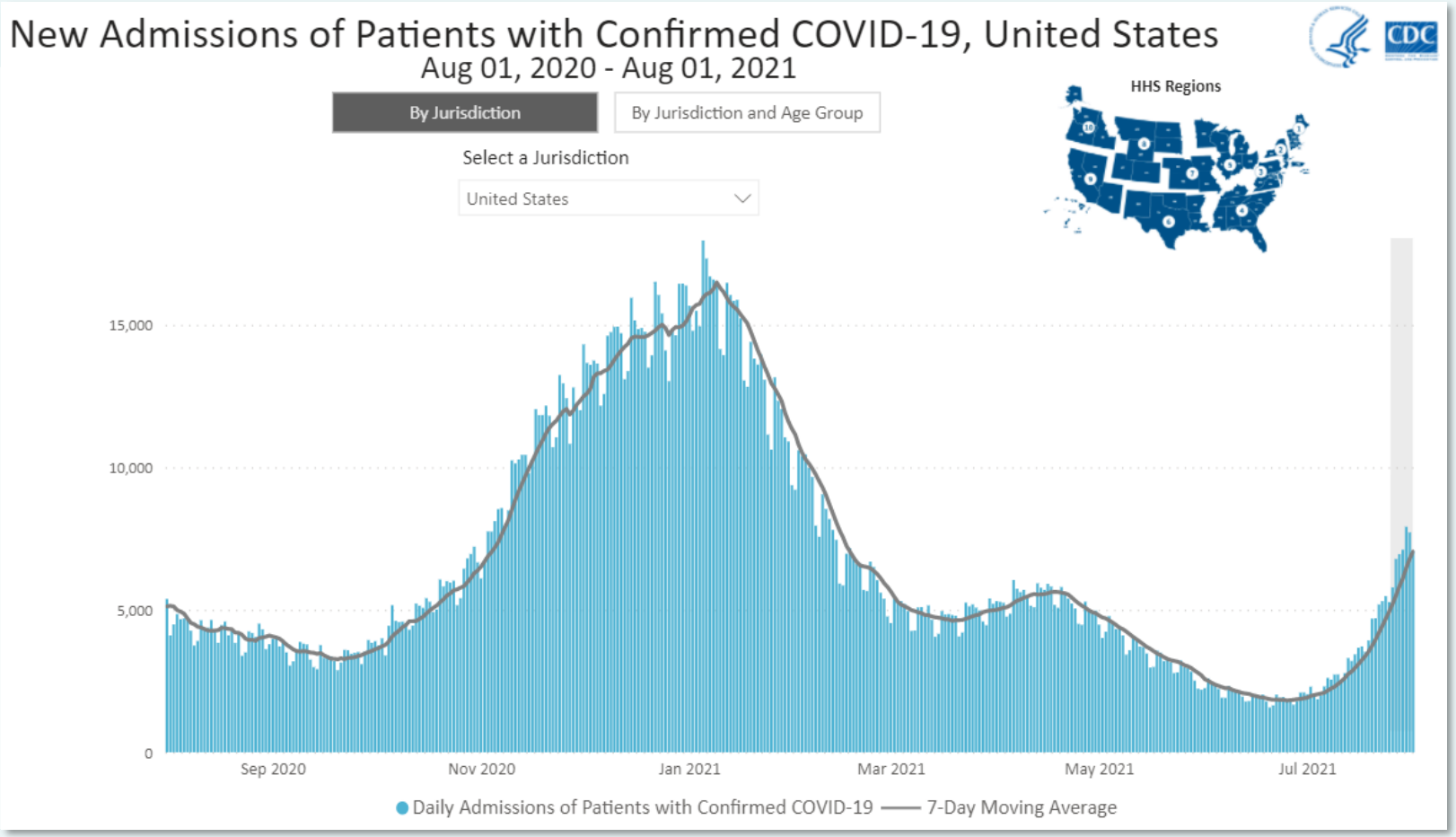
Indicator	Total new cases per 100k persons in the past 7 days
Low Transmission	0-9.99
Moderate Transmission	10-49.99
Substantial Transmission	50-99.99
High Transmission	≥ 100

Source: CDC COVID Data Tracker

National: Weekly Hospitalizations

Updated 08/03

Daily Trend in Number of New COVID-19 Hospital Admissions in the United States



2,418,770
Total New Admissions

7,047
Current 7-day Average

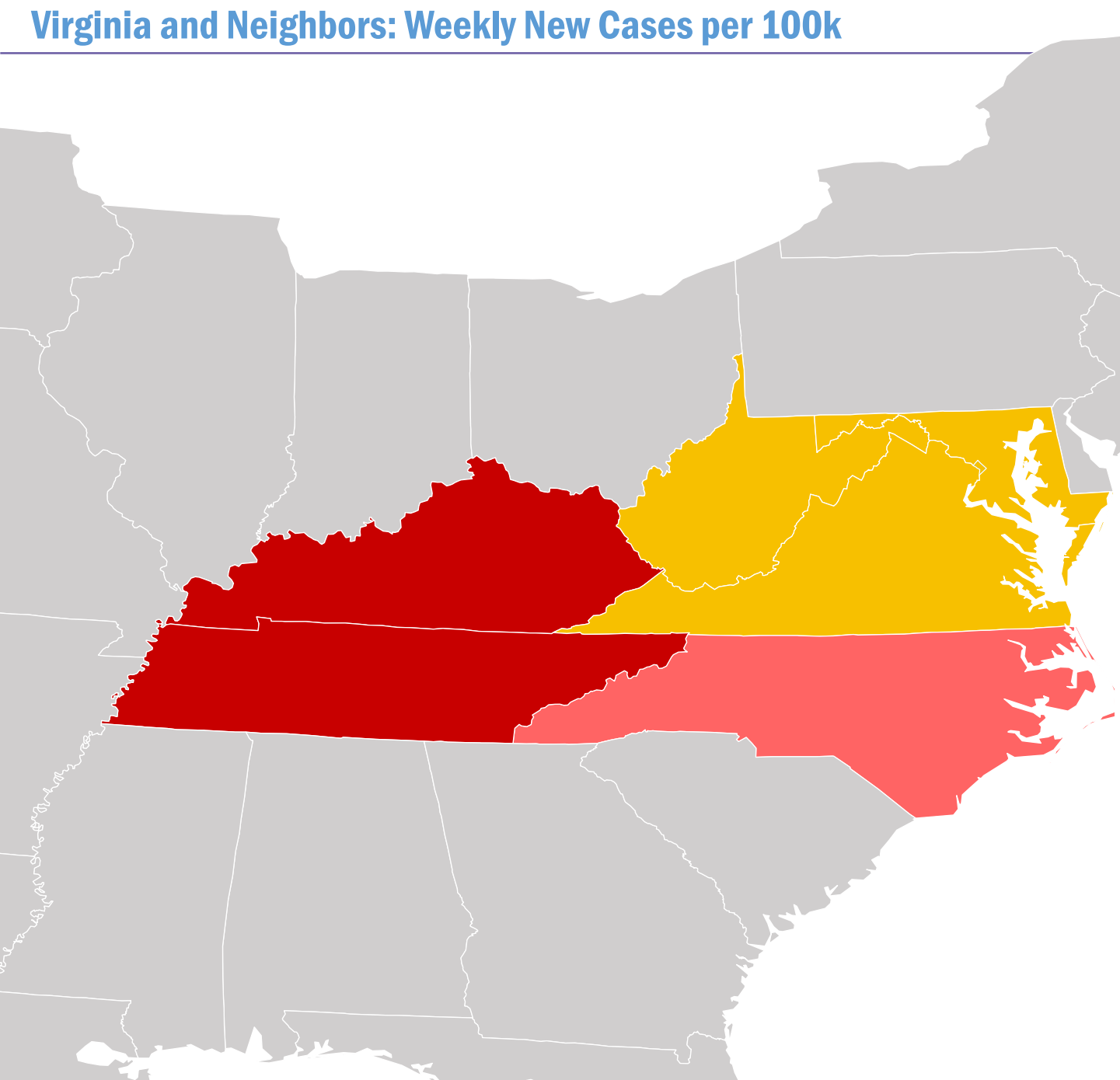
+42.7%
% Change in 7-day Average

-57.3%
% Change from peak 7-day Average (Jan 2021)

Source: CDC COVID Data Tracker

Virginia and Neighbors: Weekly New Cases per 100k

Updated 08/03



Over the last 7 days, Virginia had **97.5** (+59%) new confirmed **cases per week per 100k**

Rates Higher than Virginia:

Kentucky, **211.9** (+52%)
Tennessee, **234.3** (+86%)
North Carolina, **159.3**, (+36%)

Rates Lower than Virginia:

West Virginia, **87.8** (+52%)
District of Columbia, **78.2** (+38%)
Maryland, **56.2** (+55%)

Legend	New cases per 100k population per week
Light Green	5-9
Yellow	10-49
Orange	50-99
Light Red	100-199
Red	200-499

Source and thresholds provided by CDC, HealthData.gov

Virginia and Neighbors: Cases, Testing, and Vaccination

Updated 08/03

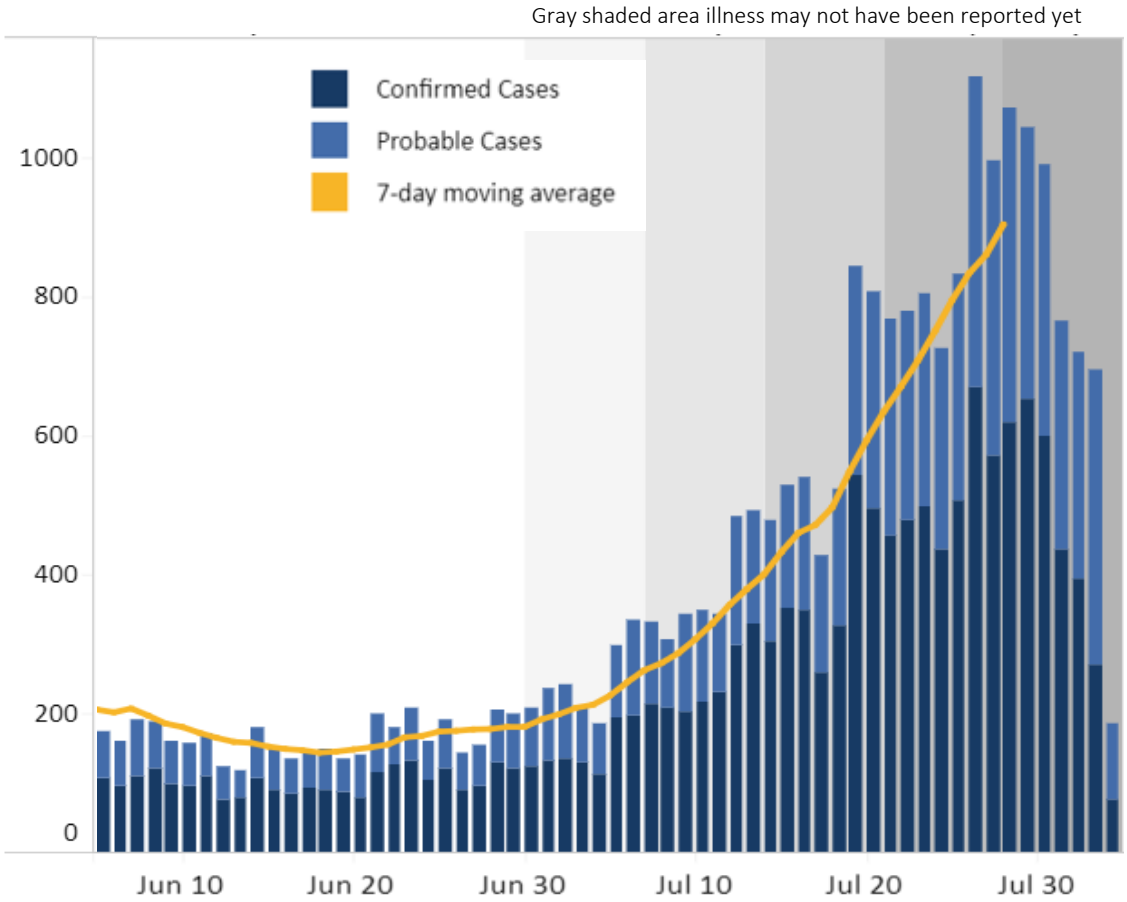
	Weekly New Cases Per 100,000 Population	PCR Percent Positive	Fully Vaccinated > 12 Years Old
Virginia	97.5	8-9.9%	63.7%
District of Columbia	78.2	3-4.9%	63.6%
Maryland	56.2	3-4.9%	69.1%
West Virginia	87.8	5-7.9%	44.9%
Kentucky	211.9	10-14.9%	53.8%
Tennessee	234.3	15-19.9%	45.9%
North Carolina	159.3	10-14.9%	51.2%

Source: CDC COVID Data Tracker

Virginia: Cases, Hospitalizations, and Deaths

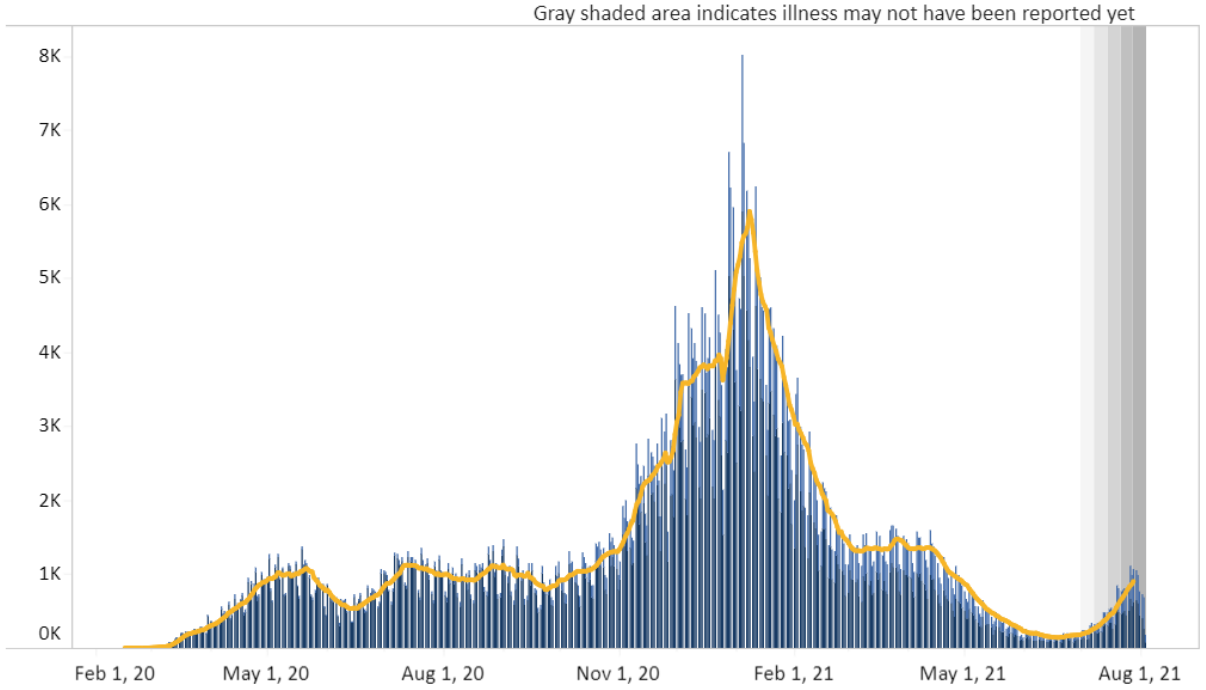
Updated 08/04

Cases by Date of Symptom Onset, last 60 days



- Compared to last week, **cases** increased to 1,279 (7-day MA) per day (+71%)
  - 0.6% lower than the mid-March low of 2021
  - 149% higher than the summer low of 2020
  - 891% higher than the Mid-June low of 2021
- **Hospitalizations** increased to 530 per day (+26%)
- **Deaths** decreased to 2.7 per day (-39%)

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 08/04

Metrics date: 08/04/2021

	Central	Eastern	Far Southwest	Near Southwest	Northern	Northwest
New cases per 100k within the last 7 days	135.0 ↑	130.0 ↑	129.7 ↑	115.1 ↑	67.5 ↑	95.0 ↑
% Positivity 7-day moving average	7.9% ↑	10.1% ↑	6.5% ↑	8.9% ↑	4.0% ↑	6.0% ↑
COVID-like ED visits rate per 100k	16.2 ↑	13.4 ↑	10.2 ↑	13.7 ↑	5.4 ↑	7.8 ↑

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

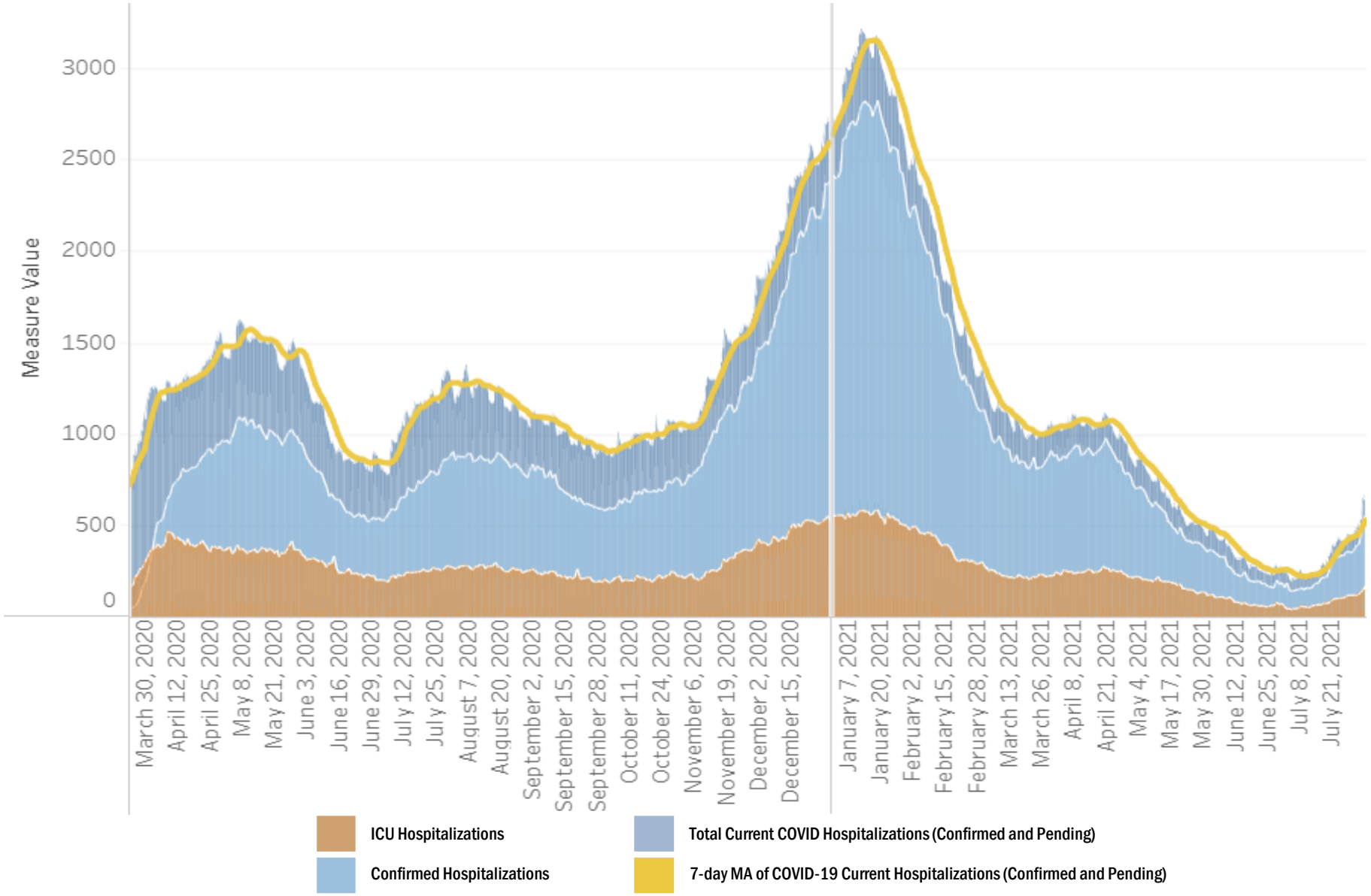
Symbol	Trend
↑	Increasing
↓	Decreasing
○	Fluctuating

Source: Region Metrics – Coronavirus

Data represents a 7-day moving average, trends compared to 1 week ago

Virginia: COVID-19 in Virginia Hospitals

Updated 08/04



530
Current 7-day Average Current Hospitalizations

+19.2%
% Change in 7-day Average

-84.0%
% Change from peak 7-day Average (Jan 2021)

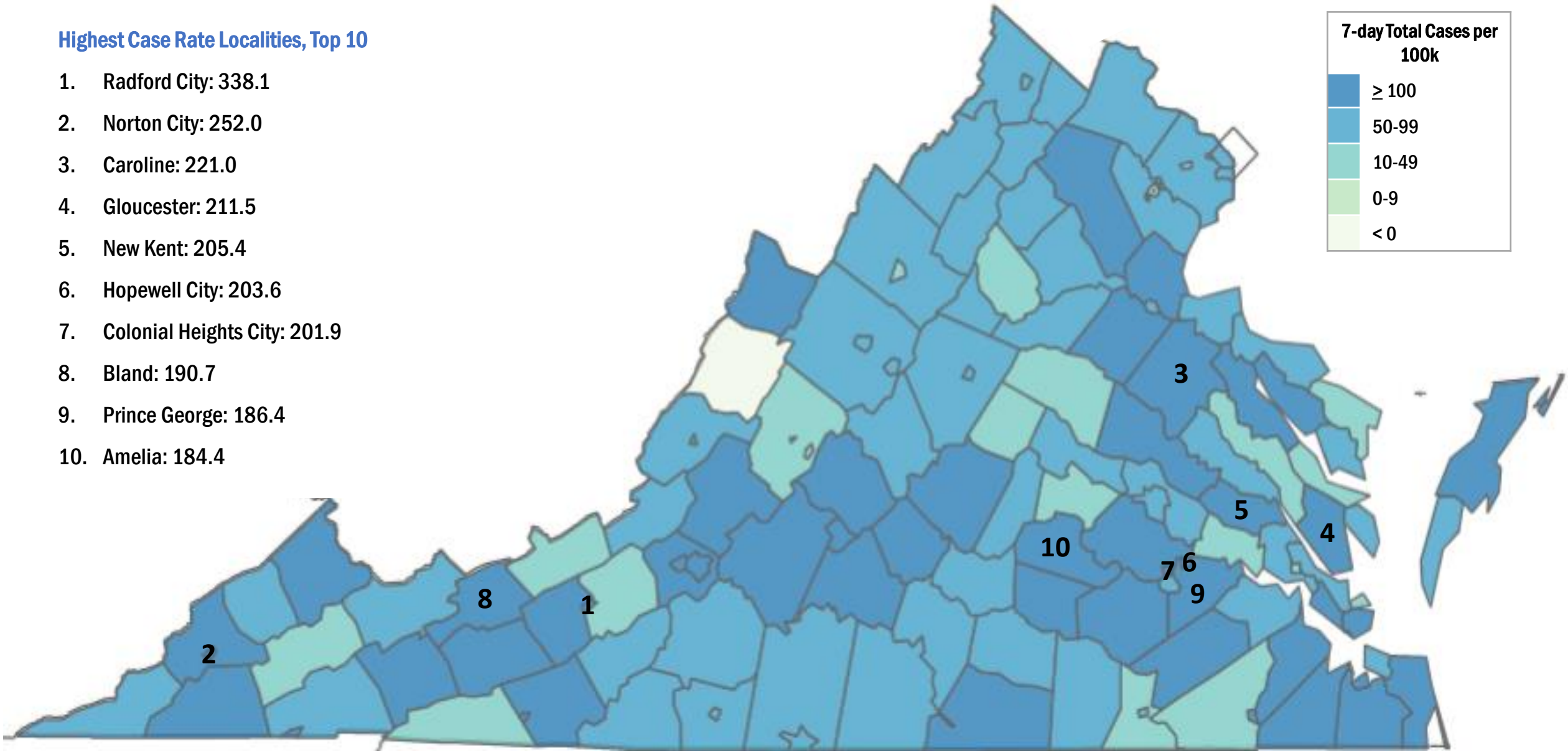
Source: VHHA Hospitalizations – Coronavirus (virginia.gov)

Virginia: Weekly Total of Cases per 100k by Locality

Updated 08/02

Highest Case Rate Localities, Top 10

1. Radford City: 338.1
2. Norton City: 252.0
3. Caroline: 221.0
4. Gloucester: 211.5
5. New Kent: 205.4
6. Hopewell City: 203.6
7. Colonial Heights City: 201.9
8. Bland: 190.7
9. Prince George: 186.4
10. Amelia: 184.4



Source: [Locality Metrics – Coronavirus (virginia.gov)]

Virginia: Outbreaks by Week

Distinct Count of Outbreaks, Blue Bars are Confirmed Outbreaks

Sources: https://dataviz.vdh.virginia.gov/views/COVID-19VOSSQAReport/DailyReporting

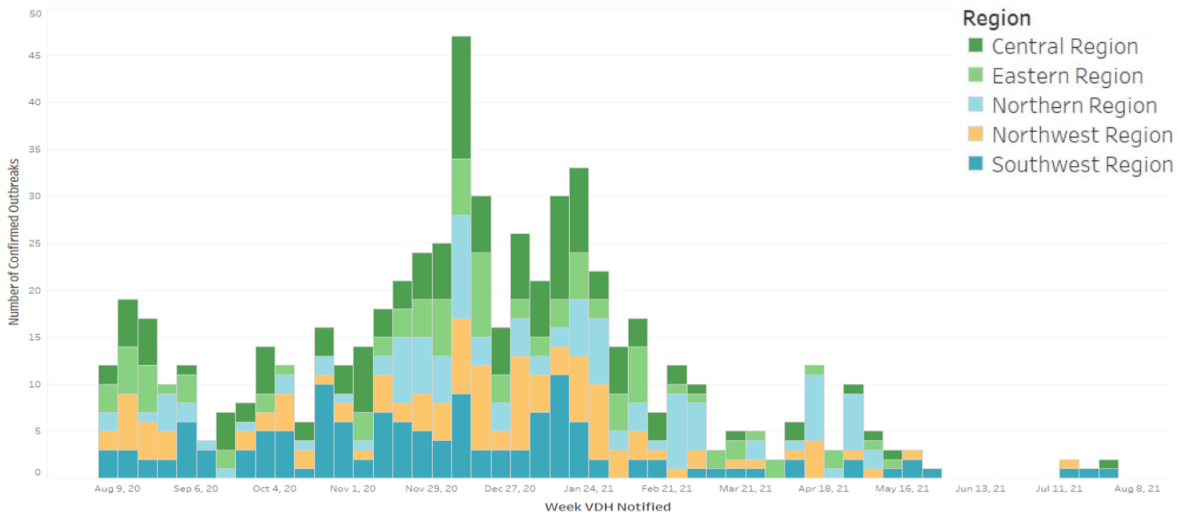
Virginia: COVID-19 Burden in LTCFs

Questions can be directed to: hai@vdh.virginia.gov

Updated 8/3

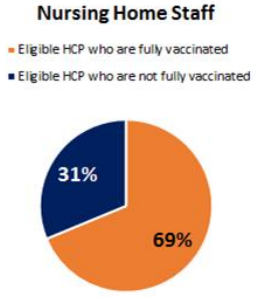
- Outbreaks in Virginia LTCFs, including nursing homes, assisted living facilities, multicare facilities, group homes, and behavioral health residential facilities, have accounted for 28% of total COVID-19 outbreaks in Virginia.
- In the past 30 days, three LTCF COVID-19 outbreaks were reported in the Southwest Region, one in Northwest, and one in Central (*see graph top right*).
- An increase in the number of LTCF outbreaks was observed in July 2021, when there were five outbreaks reported, compared to two reported in June. In July 2021, the average number of cases per outbreak increased to six, compared to three in June (*see graph bottom right*).
- Nursing homes are reporting resident and staff vaccination data weekly to NHSN. For reporting week ending July 25, 2021, 82% of residents staying in one of 282 nursing homes for at least one day during the week were fully vaccinated; 69% of eligible healthcare personnel (HCP) working at one of 281 nursing homes were fully vaccinated (*see graphs bottom left*).
    - Of the staff types, aide, assistant, and technician employees had the lowest vaccination rates (61%).

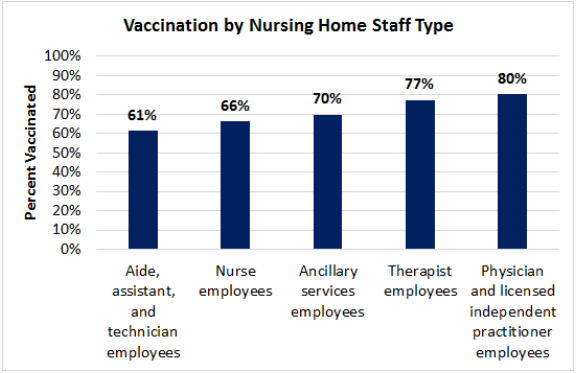
Number and Region of LTCF COVID-19 Outbreaks by Date VDH Notified

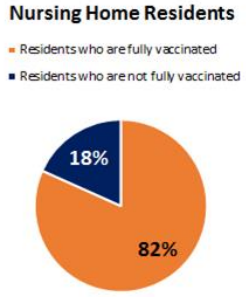


Includes outbreaks reported from nursing homes and assisted living facilities to VDH; updated 8/2/2021.

Current COVID-19 Vaccination in Virginia Nursing Homes (n=286)

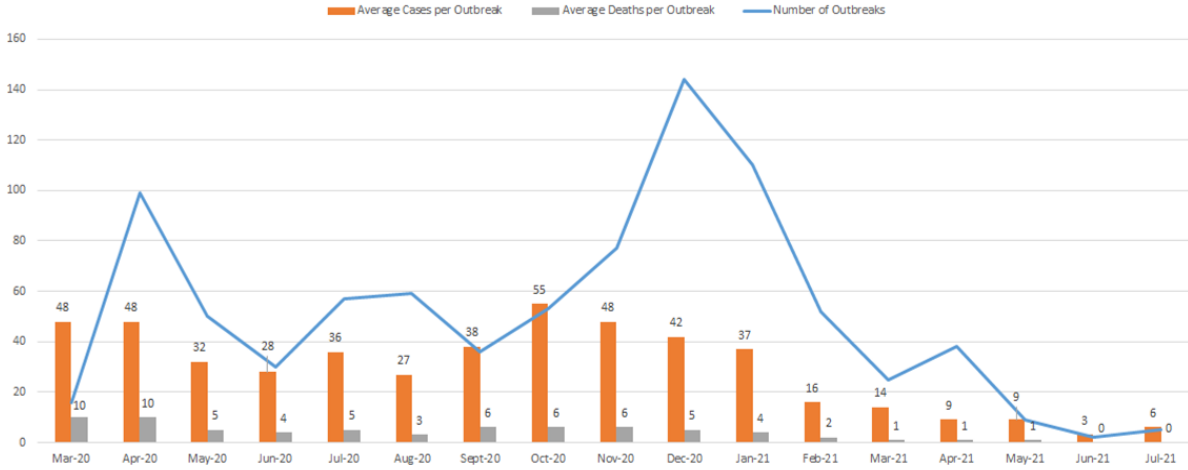






Data from the National Healthcare Safety Network (NHSN); updated 8/2/2021.
In Virginia, 282 nursing homes reported resident vaccination data for the reporting week ending 7/25/2021; 281 nursing homes reported staff vaccination data for the reporting week ending 7/25/2021.
For staff type definitions, please refer to the NHSN Table of Instructions.

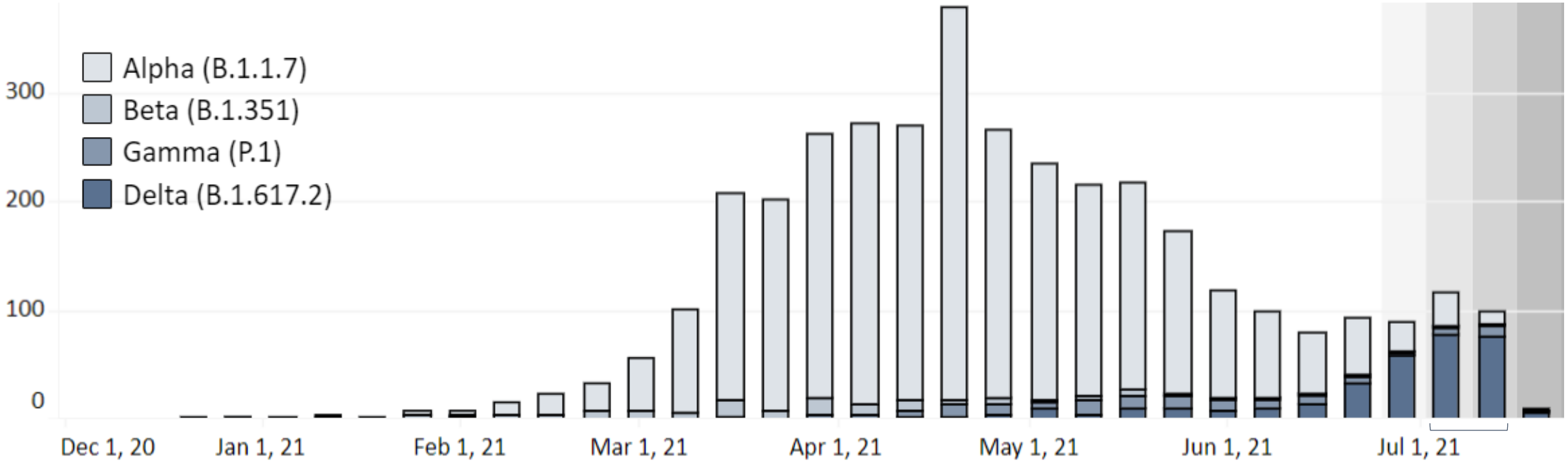
COVID-19 Outbreaks in Long-Term Care Facilities*^†



*Long-term care facility includes assisted living facilities, multicare facilities, and nursing homes
^Data from VOSS and VEDSS are subject to change
†Months here are from the date that VDH was notified. Outbreaks may have occurred in previous months and were retroactively reported to VDH. Updated 8/2/2021.

Number of Variant of Concern Infections Reported to VDH by Week

Updated 07/30



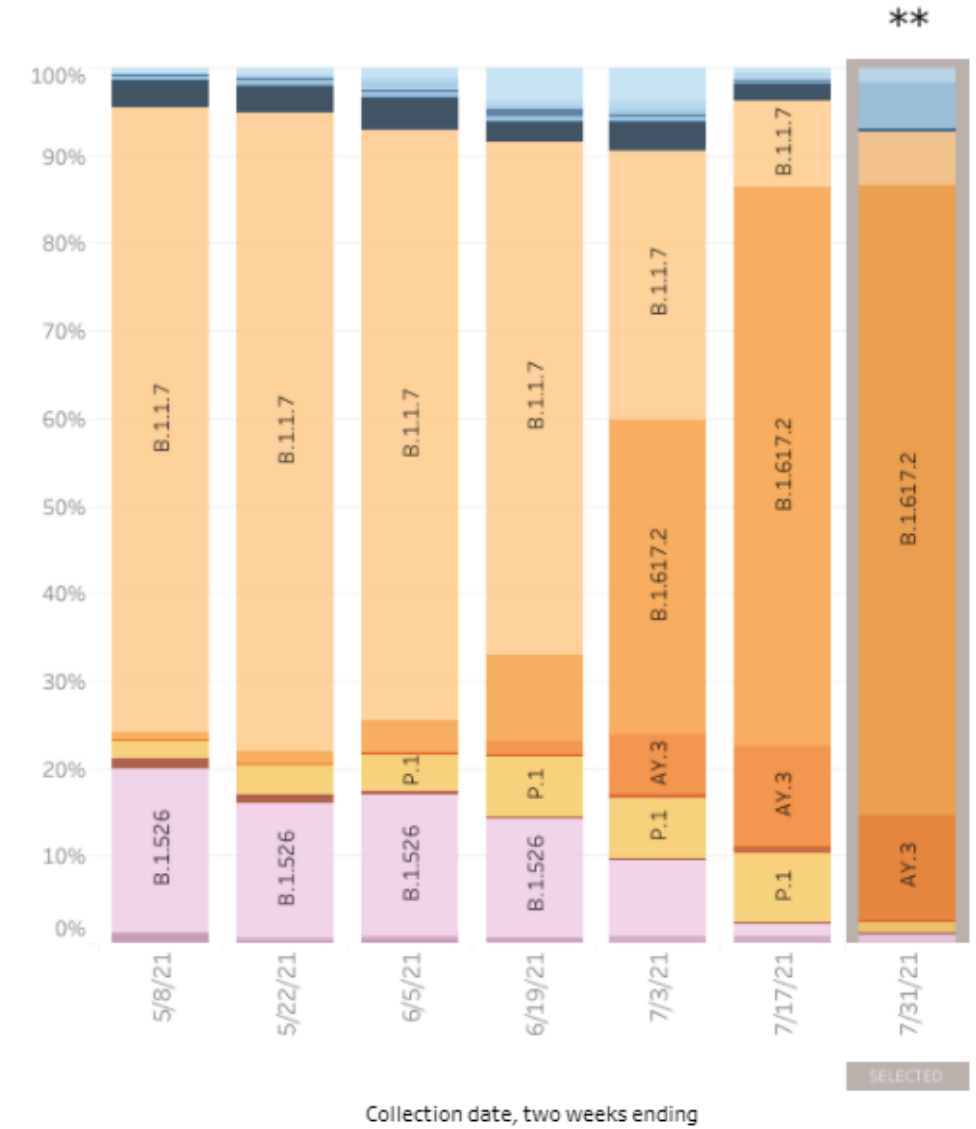
	Week Ending 7/3/2021	Week Ending 7/10/2021	Percent Change
Alpha	26.7%	13.0%	-51.3%
Beta	0%	0%	0%
Gamma	6.0%	12.0%	+100%
Delta	67.2%	75.0%	+11.6%

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

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

Updated 08/03

HHS Region 3: 4/25/2021 – 7/31/2021



HHS Region 3: 7/18/2021 – 7/31/2021 NOWCAST

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

WHO label	Lineage #	Type	%Total	95%PI
Alpha	B.1.1.7	VOC	6.4%	0.0-13.3%
Beta	B.1.351	VOC	0.0%	0.0-2.2%
Gamma	P.1	VOC	1.2%	0.0-4.4%
Delta	B.1.617.2	VOC	72.0%	57.8-84.4%
	AY.3	VOC	12.0%	4.4-22.2%
	AY.2	VOC	0.3%	0.0-2.2%
	AY.1	VOC	0.0%	0.0-2.2%
Epsilon	B.1.427	VOI	0.0%	0.0-2.2%
	B.1.429	VOI	0.0%	0.0-2.2%
Eta	B.1.525	VOI	0.0%	0.0-2.2%
Iota	B.1.526	VOI	1.0%	0.0-4.4%
	B.1.621.1		5.2%	0.0-13.3%
	B.1.621		1.5%	0.0-6.7%
	B.1		0.2%	0.0-2.2%
	B.1.628		0.1%	0.0-2.2%
	A.2.5		0.0%	0.0-2.2%
	Other*		0.0%	0.0-2.2%
	B.1.617.3	VOI	0.0%	0.0-2.2%
	B.1.626		0.0%	0.0-2.2%

* Enumerated lineages are VOI/VOC or are circulating >1% in at least one HHS region during at least one two week period; remaining lineages are aggregated as "Other".
** 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 no longer aggregated with B.1.617.2.

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

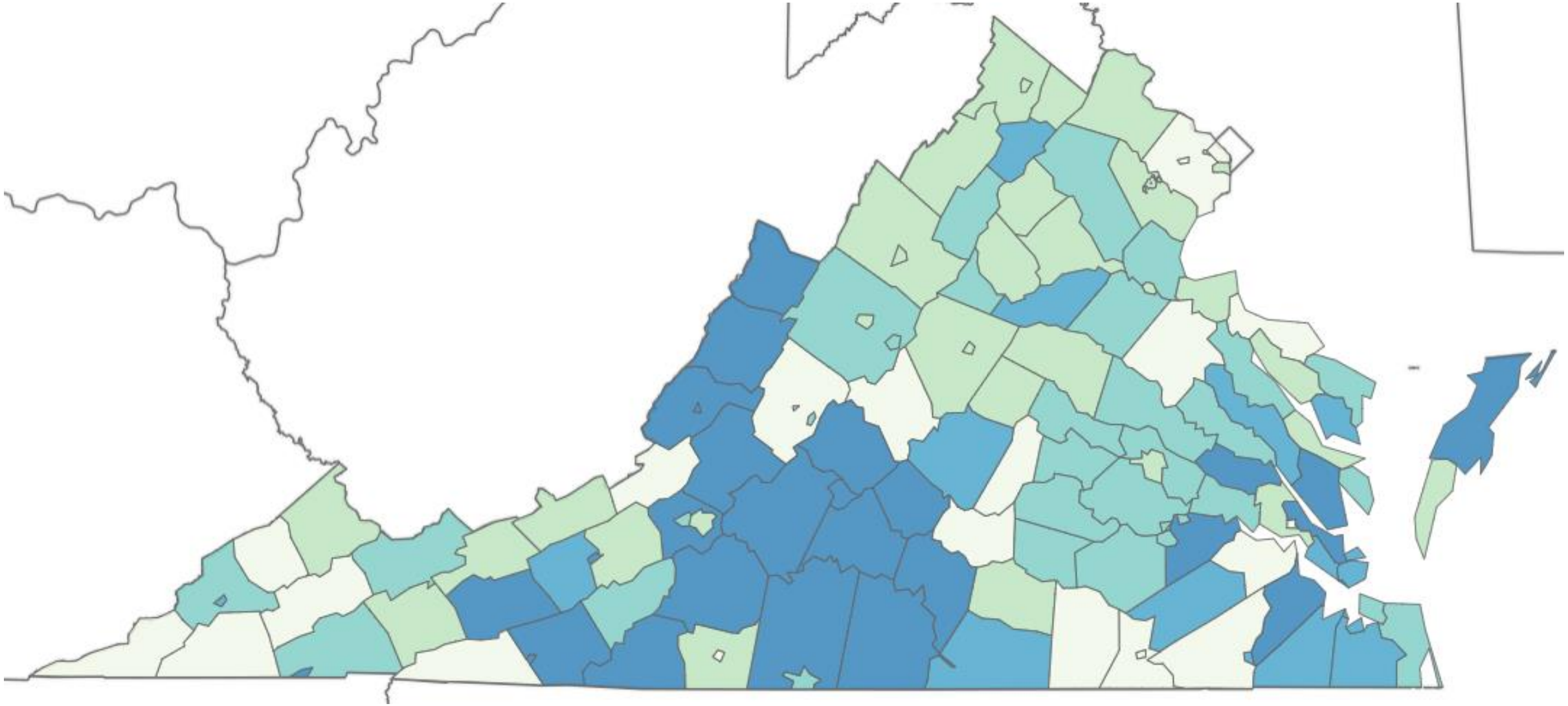
Delta Variant (B.1.617.2) = "Fastest and Fittest"

1. **Delta spreads rapidly**
   - Chinese study: Viral load ~1000 times higher than those in the earlier 19A/19B strain infections; Exposure to detection of virus was ~3.7 days compared to 6 days previously
   - CDC - Delta spreads more than twice as easily from one person to another, compared with wild type virus.
   - Lancet - R0 – Wild type~2.5; Delta~6-7 (Alpha 50-60% more transmissible than wild type; delta 50-60% more transmissible than alpha); Requires herd immunity of ~85%
   - UK: May 20–June 7 compared to April 15–May 3
     - Rapid replacement of the Alpha (B.1.1.7) variant of SARS-CoV-2 with the Delta variant
     - With restrictions in place, detected exponential growth with a doubling time of 11 days and an Re of 1.44
     - Prevalence in 5-49 year-old age group was 2.5 times higher than 50-years-old-and-above age group
     - Majority of the infections in the younger age group were unvaccinated (or no vaccination status indicated)
2. **Data not clear on whether Delta causes more severe illness**
3. **Vaccine effectiveness (VE): It's important to get two doses of mRNA vaccine**
   - NEJM – UK study: After one dose of Pfizer vaccine (BNT162b2), VE was 30.7% among persons with the delta variant (vs. 48.7% for alpha variant); VE of two doses was 88.0% for delta variant (vs. 93.7% for alpha variant)
   - Israel Ministry of Health - Evaluated data from 1/31/21 – 7/10/21: 40% effective against symptomatic infections; 39% effective against any infection; 91% against serious disease; 88% effective against hospitalization; Found that for people vax >6 months ago, effectiveness was lower; Breakthrough infections were most prominent among people aged 60 and older

COVID-19 Positivity Rates by Locality

Updated 08/02

The map below shows a gradient of every Virginia locality and it's corresponding 7-day moving average positivity rate. Darker shades of blue indicate higher locality positivity rates. **60% of Virginia localities have surpassed a 5% positivity rate, including the 23% that have surpassed a 10% positivity rate.**



Positivity rate map is from the VA COVID-19 Pandemic Metrics Dashboard and reflects the percent positivity for the 7-day period 7/26/21 – 8/2/21.

Virginia Localities with Positivity Rates > 5%

Updated 08/02

The localities below have a 7-day moving average positivity rate of 5% or greater.

Locality	Positivity Rate	Locality	Positivity Rate	Locality	Positivity Rate
Accomack	15.54%	Franklin City	8.78%	Orange	9.61%
Alleghany	11.02%	Fredericksburg City	9.14%	Page	7.63%
Amelia	7.68%	Galax	28.33%	Patrick	10.36%
Amherst	12.96%	Gloucester	14.33%	Petersburg	7.54%
Appomattox	12.26%	Goochland	7.72%	Pittsylvania	12.78%
Augusta	5.87%	Halifax	10.87%	Portsmouth	9.28%
Bath	17.14%	Hampton City	9.85%	Powhatan	5.10%
Bedford	11.99%	Hanover	8.43%	Prince George	12.52%
Botetourt	12.60%	Harrisonburg City	5.10%	Pulaski	8.61%
Bristol	15.94%	Henrico	6.00%	Radford City	14.98%
Buckingham	8.19%	Highland	14.29%	Richmond City	6.00%
Buena Vista City	7.62%	Hopewell	9.17%	Roanoke	11.31%
Campbell	14.51%	Isle of Wight	6.80%	Salem	6.97%
Carroll	14.05%	King and Queen	10.00%	Shenandoah	5.24%
Charlotte	10.43%	King George	6.92%	Spotsylvania	7.90%
Chesapeake	10.80%	King William	5.86%	Stafford	8.51%
Chesterfield	8.24%	Lancaster	8.73%	Suffolk	9.28%
Clarke	8.53%	Lynchburg	11.74%	Sussex	5.80%
Colonial Heights	8.87%	Mathews	10.48%	Tazewell	6.09%
Covington	11.02%	Mecklenburg	8.50%	Virginia Beach	8.24%
Culpepper	5.67%	New Kent	13.01%	Warren	8.24%
Danville	6.58%	Newport News	11.34%	Washington	7.29%
Dinwiddie	6.55%	Norfolk	9.34%	Waynesboro	6.66%
Essex	13.65%	Northampton	5.76%	Wise	6.01%
Fauquier	7.63%	Northumberland	6.56%	Wythe	14.46%
Floyd	5.71%	Norton City	8.16%	York	12.00%
Franklin	15.33%	Nottoway	7.39%		

Positivity rate data is from the VA COVID-19 Pandemic Metrics Dashboard and reflects the percent positivity for the 7-day period 7/26/21 – 8/2/21.

Tests Conducted by Health District

Updated 08/02

- Over the 7-day period from 7/23 – 7/29, a **total of 100,340 antigen + PCR tests were conducted statewide.** As of 7/29, the 7-day moving average for **PCR tests conducted per day was 11,117.**
- The below depicts total testing conducted by Health District over the 7-day period 7/23 – 7/29. The 10 Districts with the lowest number of tests conducted per 100k are highlighted in red.

Health District	7-Dy PCR	7-Day Antigen	Total Tests per 100k (over 7 days)
Alexandria	2620	364	0.019
Alleghany	1000	781	0.021
Arlington	4325	608	0.021
Blue Ridge	2703	420	0.012
Central Shenandoah	1651	891	0.008
Central Virginia	887	1487	0.009
Chesapeake	1580	734	0.010
Chesterfield	3452	2301	0.015
Chickahominy	1120	836	0.012
Crater	1771	609	0.015
Cumberland Plateau	447	133	0.006
Eastern Shore	312	374	0.016
Fairfax	11472	4026	0.013
Hampton	806	269	0.008
Henrico	3168	1511	0.014
Lenowisco	471	368	0.010
Lord Fairfax	1532	970	0.010

Health District	7-Dy PCR	7-Day Antigen	Total Tests per 100k (over 7 days)
Loudoun	3712	1678	0.013
Mount Rogers	1352	579	0.010
New River	879	613	0.008
Norfolk	1471	615	0.009
Peninsula	1952	1314	0.009
Piedmont	509	343	0.008
Pittsylvania-Danville	413	193	0.006
Portsmouth	721	169	0.009
Prince William	3761	1808	0.011
Rappahannock	2297	1838	0.011
Rappahannock Rapidan	1027	692	0.010
Richmond	2910	922	0.017
Roanoke	2490	1013	0.018
Southside	648	204	0.010
Three Rivers	691	445	0.008
Virginia Beach	3176	1613	0.011
West Piedmont	427	454	0.011
Western Tidewater	1106	306	0.007

Data sources: VDH Public Use Dataset "Tests by Lab Report Date," 2018 NCHS Population Estimates, VDH Testing Data Dashboard

Recent Literature of Possible Interest to VDH

Miller et al. analyzed the mortality data during the pandemic to estimate increases associated with different socioeconomic and demographic factors

- They found the largest increases among those living in correctional facilities or long-term care facilities (an additional 20-30 deaths per 100,000)
- The uninsured, those in poverty, and those with limited work-from-home options also had large increases in mortality (an additional 20-30 deaths per 100,000)

Eichenbaum et al. used an equilibrium model to explore the relationship between income inequality and excess deaths during the pandemic

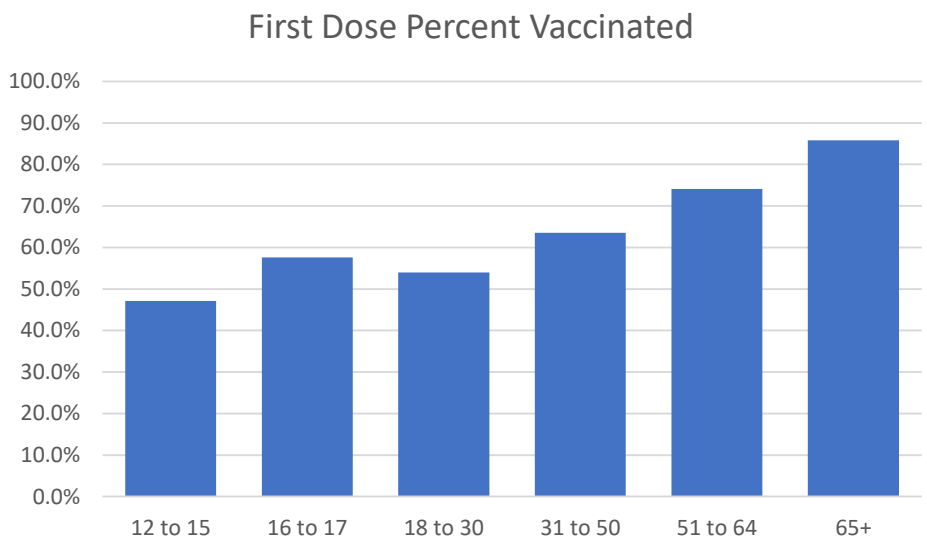
- Low-income individuals were more likely to get COVID and to die from COVID if they got infected
- Their model indicates that roughly two-thirds of the rise in deaths among low-income people is attributable to pre-existing inequalities and the remaining third is due to low-income individuals disproportionately working in high exposure jobs

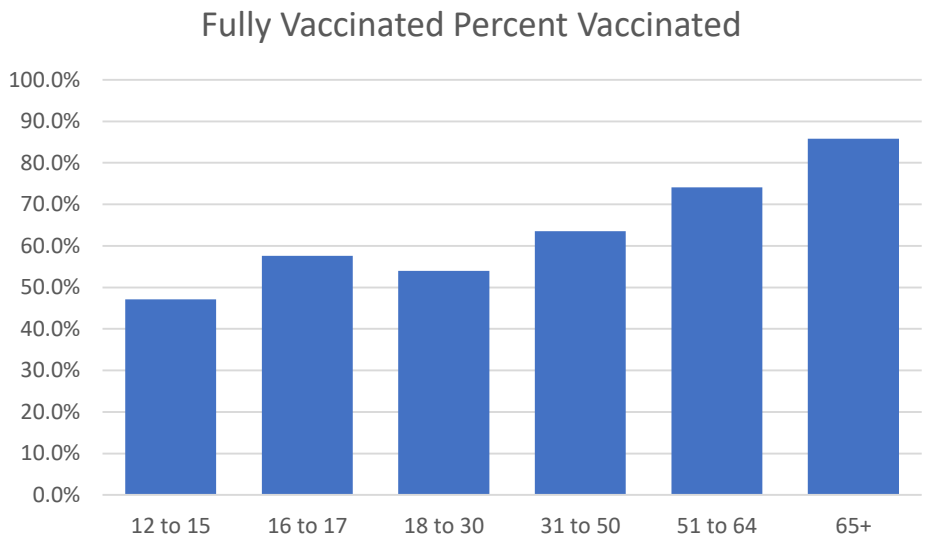
Helliwell et al. studied the well-being outcomes from different COVID-19 response strategies

- The authors compared mitigation and elimination strategies across countries by excess deaths, confidence in government, and well-being factors
- Across all of the goals the authors examined, those countries applying an elimination strategy performed better than the countries using a mitigation strategy when controlling for region
- It is too late to apply an elimination strategy against the Delta variant, but this could be useful to apply in advance of any future wave of COVID or other similar diseases

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:

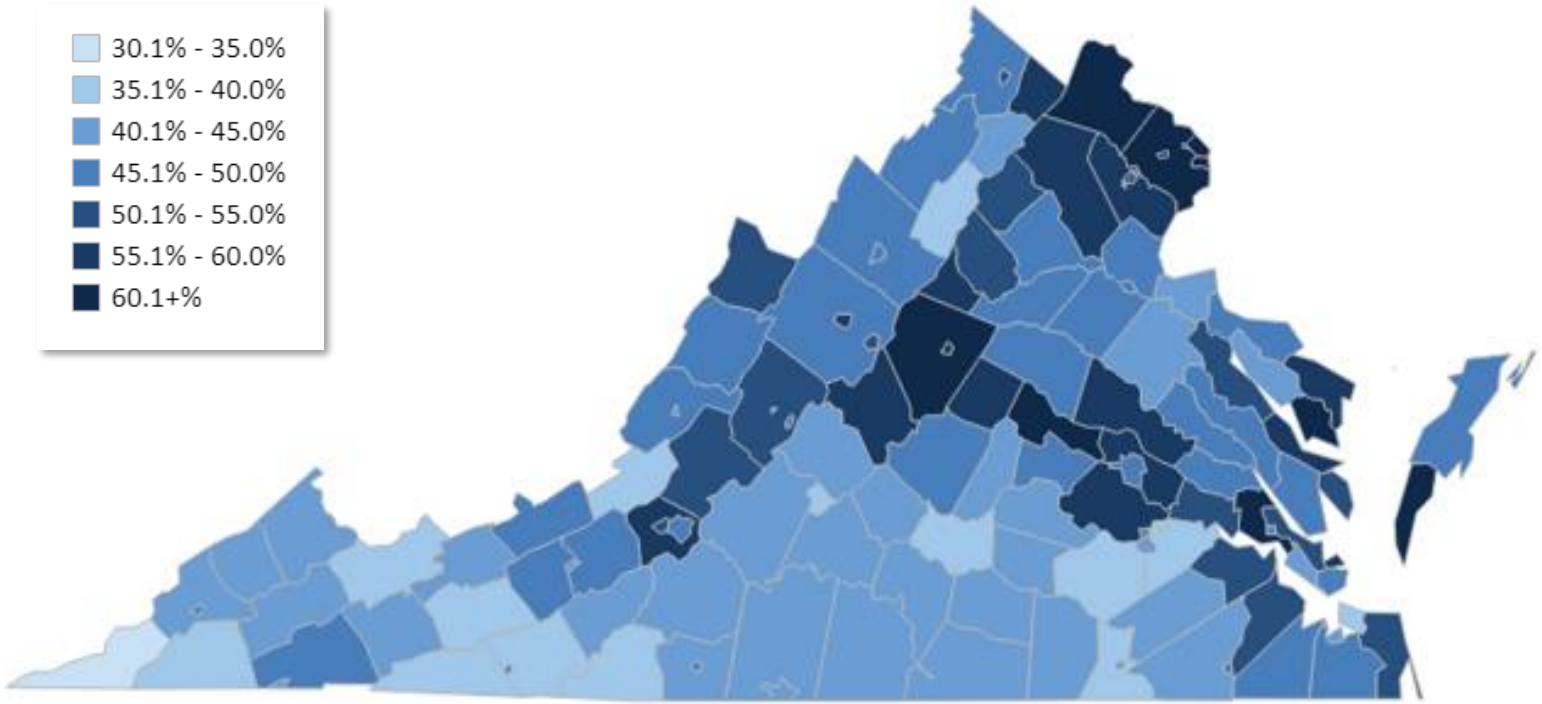
- Median Metaculus forecast for when 75% of all Virginians will have received at least one vaccine dose is **April 2022**
- The Interquartile range for the Metaculus forecast is Dec 2021 to July 2023.

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

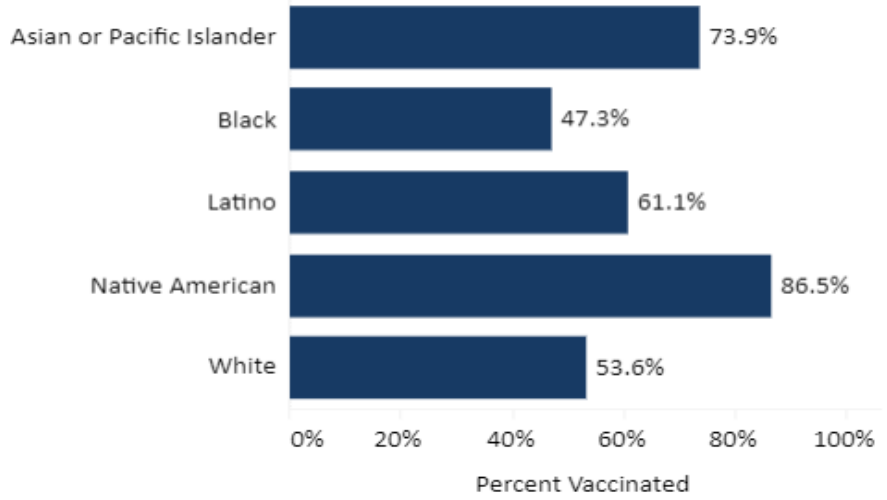
There are Varying Rates of Vaccination across Race/ Ethnicity groups

- 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

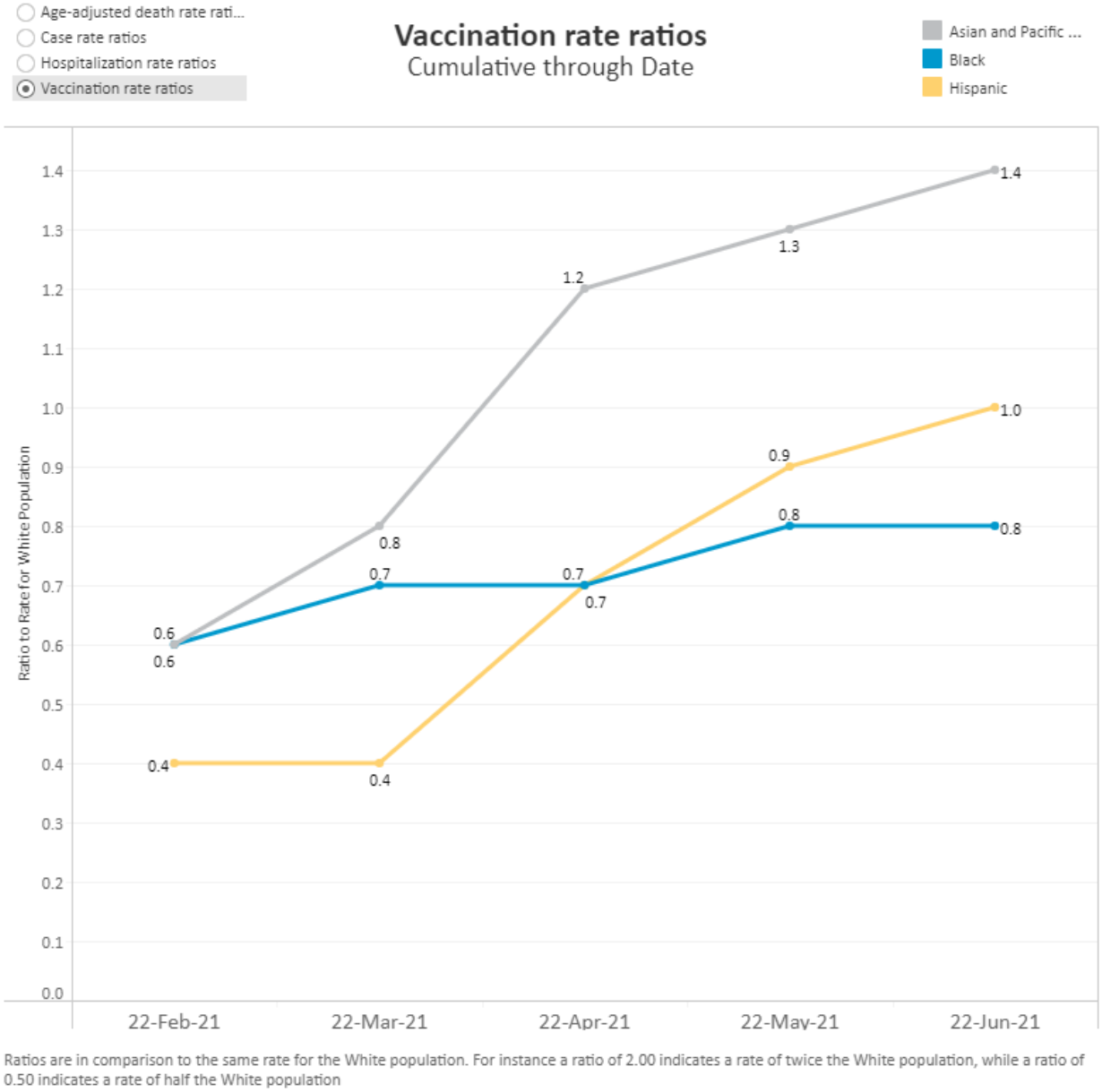
- Blacks have been vaccinated at 0.8 per White person
- Latinos have been vaccinated at 1.0 per White person

First Dose Vaccination Rate by Race / Ethnicity



Federal doses not included in this number

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

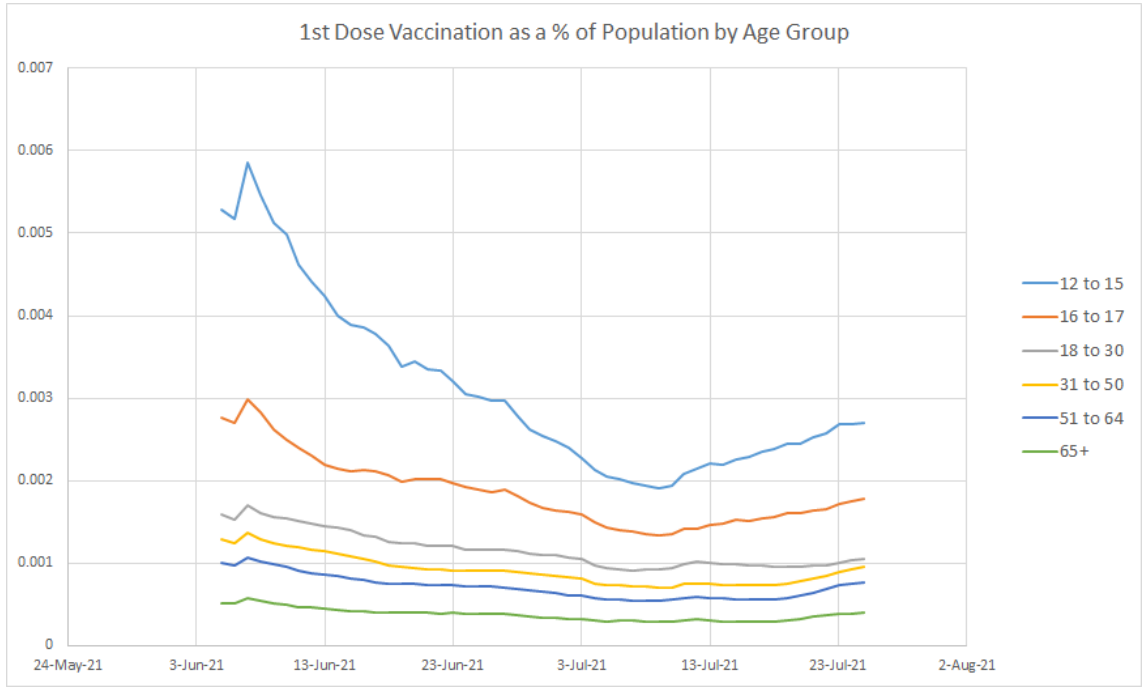


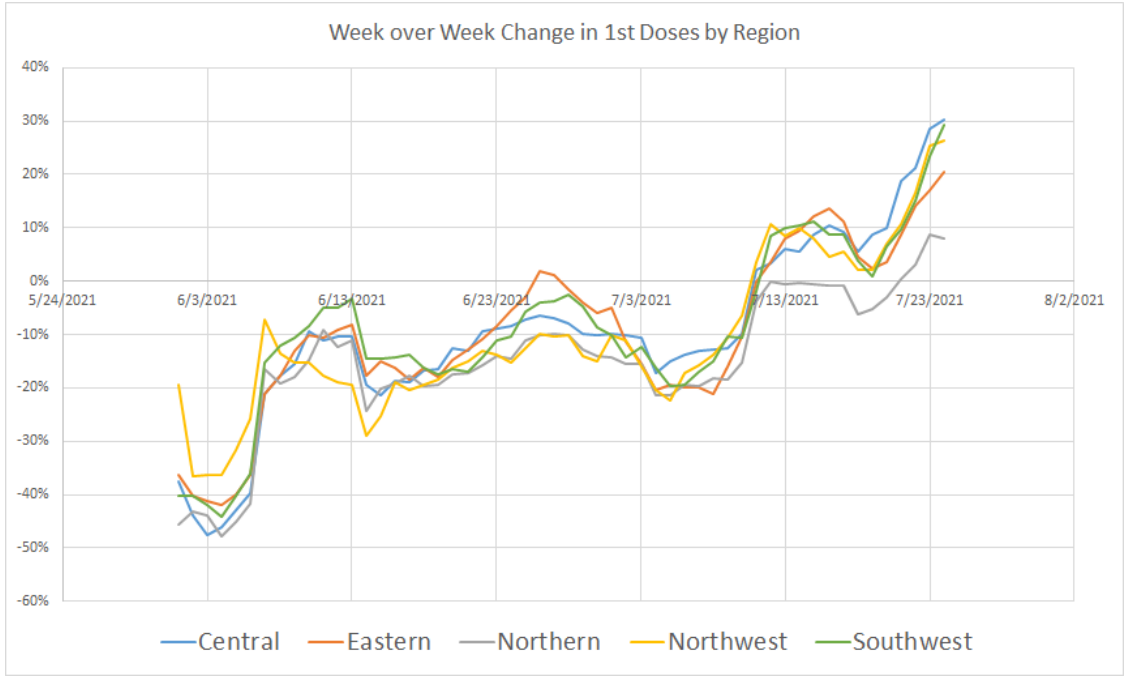
Ratios are in comparison to the same rate for the White population. For instance a ratio of 2.00 indicates a rate of twice the White population, while a ratio of 0.50 indicates a rate of half the White population

Virginia: Vaccination Rate Increasing Across the State

There is an increasing rate of vaccinations across ages and regions, after weeks of decline

- The least vaccinated geographies are showing the greatest increases in Vaccination Rates
- The youngest age groups, which are also showing the greatest rate of increase



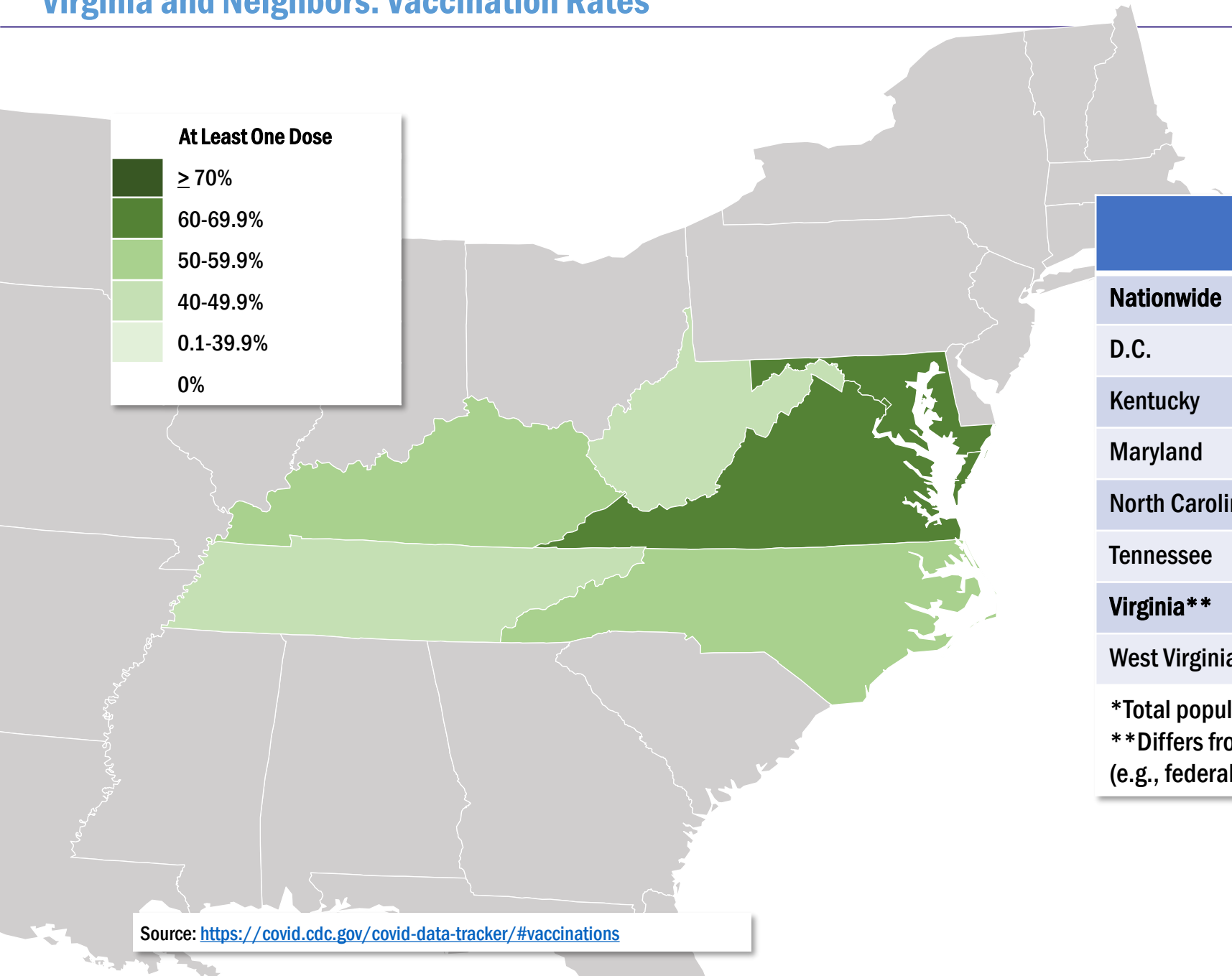


Federal doses not included in this number

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