Virginia COVID-19 Surveillance Data Update

December 2, 2021

VIRGINIA'S HEALTH IS IN OUR HANDS.
Do your part, stop the spread.

Omicron (B.1.1.529) variant

- New WHO and US variant of concern
  - Large number of mutations that can potentially increase infectivity and transmissibility, confer resistance to some therapeutics, and reduce neutralization by convalescent and vaccinee sera

- First detected in Botswana on November 11
- South Africa conducted a good epidemiologic review in November and alerted WHO and other countries

- By December 1, at least 20 countries have detected it, including the U.S.
  - Identified in North America, Africa, Europe, Middle East, Asia, Australia
  - Community transmission identified in Germany and Portugal

- Laboratory testing is a critical component of public health response to and surveillance of emerging variants
  - Omicron has Δ69-70 deletion in the spike (S) gene. This mutation leads to failure of one of the PCR targets (S-gene target failure (SGTF)) when the virus is tested with assays that include an S gene target, including the Thermo Fisher Scientific TaqPath™ COVID-19 Combo Kit diagnostic assay
  - Presence of the SGTF profile on a PCR test signals the need for sequencing to characterize the variant

Lots of Unknowns about Omicron

- It is unknown…
  - how efficiently it can spread from person to person
  - whether it is more transmissible than other variants
  - the clinical manifestations of infection or disease severity
  - effect on vaccines and therapeutics

- Preliminary data from South Africa…
  - suggest increased infectivity
  - no unusual symptoms associated; symptoms may be milder in persons who have been vaccinated or previously infected with SARS CoV-2

- Studies are underway to answer these questions

Genomic Surveillance

- DCLS has created a network of sequencing laboratories in Virginia (VAS3) to increase genomic sequencing capacity for variant surveillance and detection; CDC has also contracted private commercial laboratories to sequence samples from across the US including VA samples
  - DCLS requested submission of 50 samples per week from all Virginia hospitals for genomic sequencing
- DCLS conducted a retrospective analysis of all sequences generated to date
  - Omicron was not previously identified
- DCLS to establish guidance for laboratories for the confirmation and verification of suspected Omicron variants

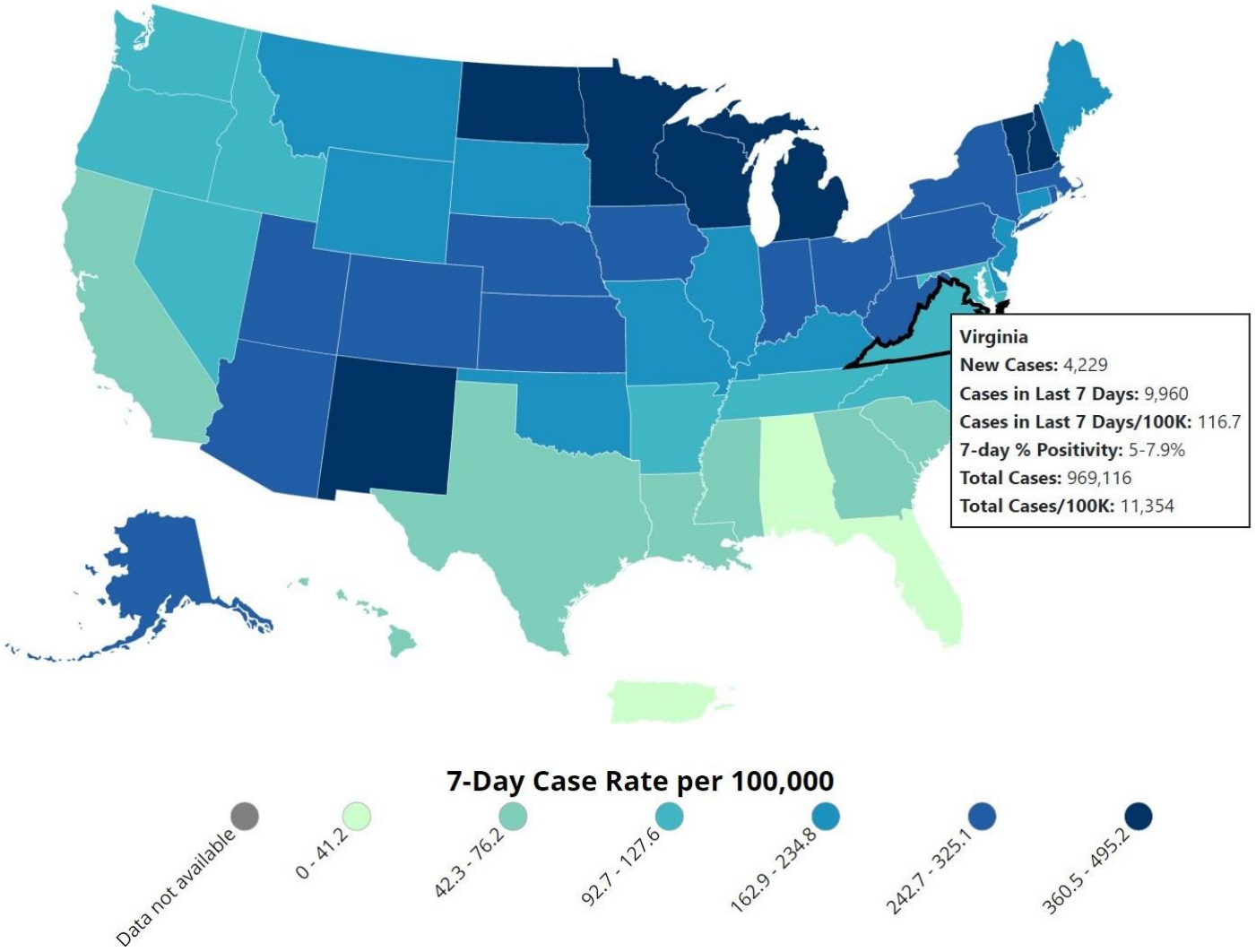
But the response is the same…layers of prevention to slow SARS-CoV-2 transmission

- Vaccination, masking, improving ventilation, distancing, handwashing, and testing
- Case investigation, contact tracing, international traveler monitoring
- Everyone ages 5 and older get fully vaccinated against COVID-19 as soon as possible
  - Everyone 18 years and older receive a booster dose at the recommended interval.
- Everyone ages 2 years and older wear masks in public indoor places in areas of substantial or high transmission
  - Unvaccinated people wear masks regardless of community transmission level
  - Masks are required in indoor areas of public transportation conveyances and U.S. transportation hubs independent of vaccination status
- People who have a close contact with someone who has COVID-19 get tested 5-7 days after exposure (even if they are asymptomatic) and wear a mask indoors in public for 14 days following exposure or until their test result is negative
- People who develop symptoms of COVID-19 get tested and stay home until their test result is negative
- People who have a positive test result isolate at home for 10 days

National: Weekly COVID-19 Case Rate

Updated 12/1

US COVID-19: 7-Day Case Rate per 100,000, by State/Territory



	Cases in the Last 7 Days Per 100k Population
Virginia	116.7 (-7.4%)
U.S.	169.1 (-15.0%)
Vermont	495.2 (+41.1%)
Michigan	479.3 (-19.3%)
New Hampshire	467.2 (-9.1%)

Our Neighbors

Rates Higher than Virginia

West Virginia, **250.5** (-22.2%)
Kentucky, **210.5** (-9.7%)

Rates Lower than Virginia:

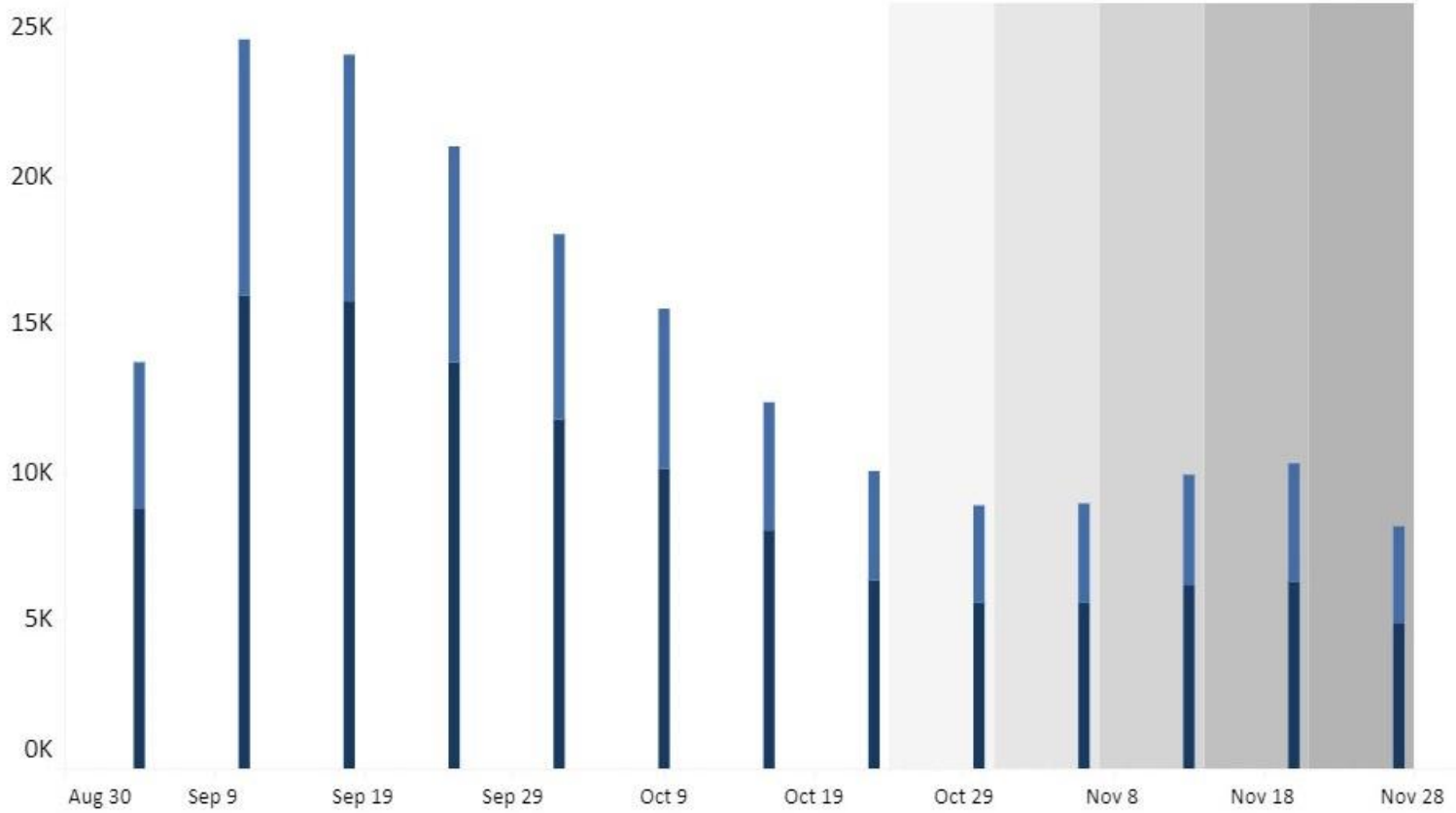
North Carolina, **112.3** (-15.6%)
Tennessee, **109.7** (-21.6%)
Maryland, **108.4** (-2.3%)
District of Columbia, **72.3** (-29.1%)

Source: CDC COVID Data Tracker Please note rate change comparisons are from the previous week's data.

Virginia: Cases, Hospitalizations, and Deaths

Updated 12/1

Cases by Date of Symptom Onset, Past 13 weeks



Gray shaded area illness may not have been reported yet

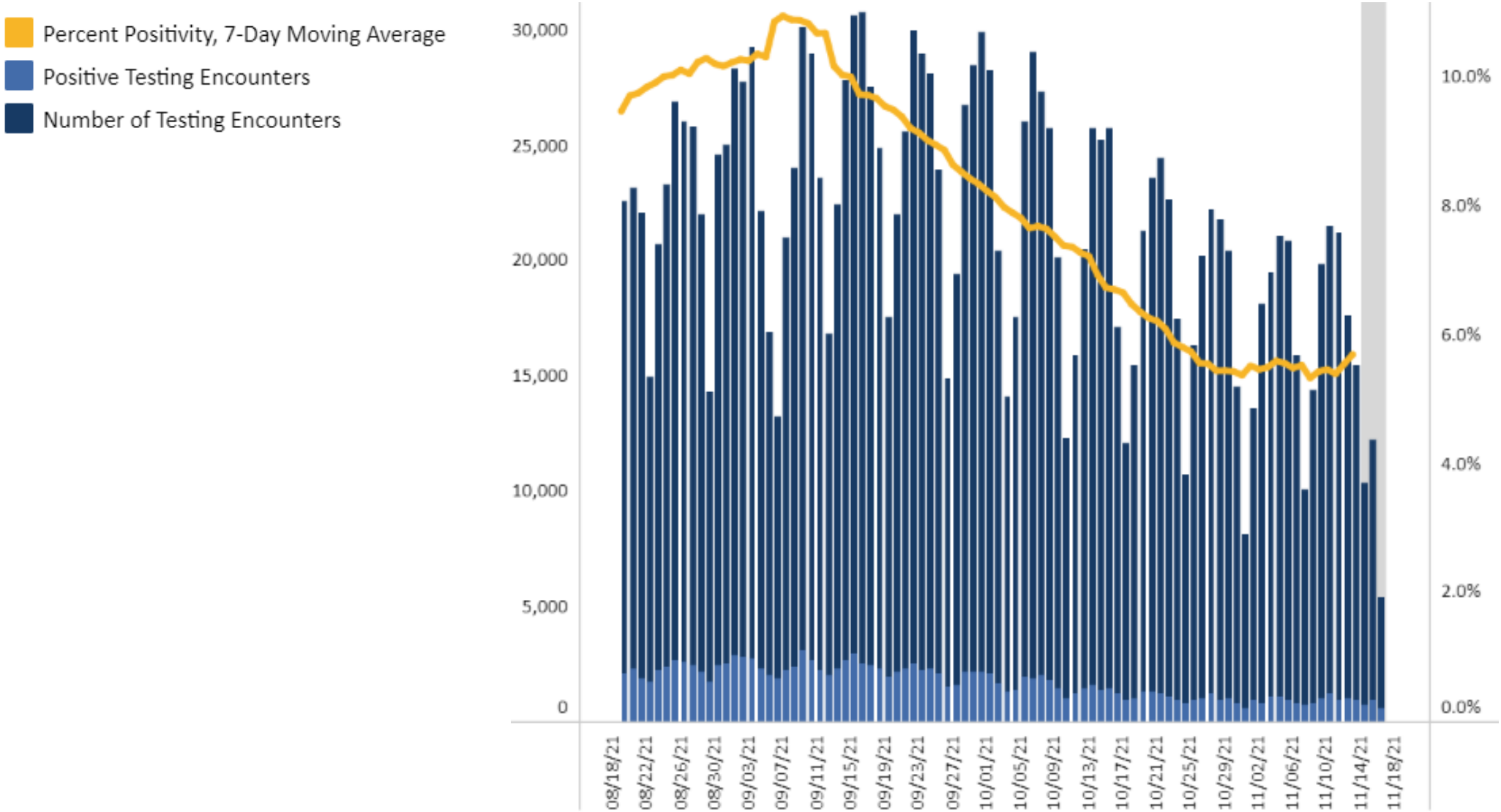
- Compared to last week, **cases** decreased to 1,548 (7-day MA) from 1,555 per day (~0%)
- **Hospitalizations** increased to 922.3 per day (+8.0%)
- **Deaths** decreased to 19 per day (-13.6%)

Source: Cases – Coronavirus (virginia.gov), Cases and Deaths - Coronavirus (virginia.gov), VHHA Hospitalizations – Coronavirus (virginia.gov), Data represent a 7-day moving average

COVID-19 Tests Positivity Rate

Updated 11/29

The PCR positivity rate was 6.1% for the 7-day reporting period ending on 11/25/21, which is a 0.4 percentage point increase from the positivity rate of 5.7% from the prior reporting period.



Data source: Screenshot from VDH COVID-19 Cases & Testing dashboard, accessed on 11/18/21 from this link: https://www.vdh.virginia.gov/coronavirus/see-the-numbers/covid-19-in-virginia/covid-19-in-virginia-testing.

Virginia: Regional Metric Summary

Updated 12/1

Metrics date: 12/1/2021

	Central	Eastern	Far Southwest	Near Southwest	Northern	Northwest
New cases per 100k within the last 7 days	124.5 ↑	92.9 ↑	278.5 ↓	169.8 ↓	89.4 ↓	175.5 ↑
% Positivity 7-day moving average	6.3% ↑	7.4% ↑	12.6% ↑	11.5% ↑	3.9% ↑	9.3% ↑
COVID-like ED visits rate per 100k	14.6 ↓	8.9 ↓	18.6 ↓	14.8 ↓	5.9 ↓	10.0 ↓

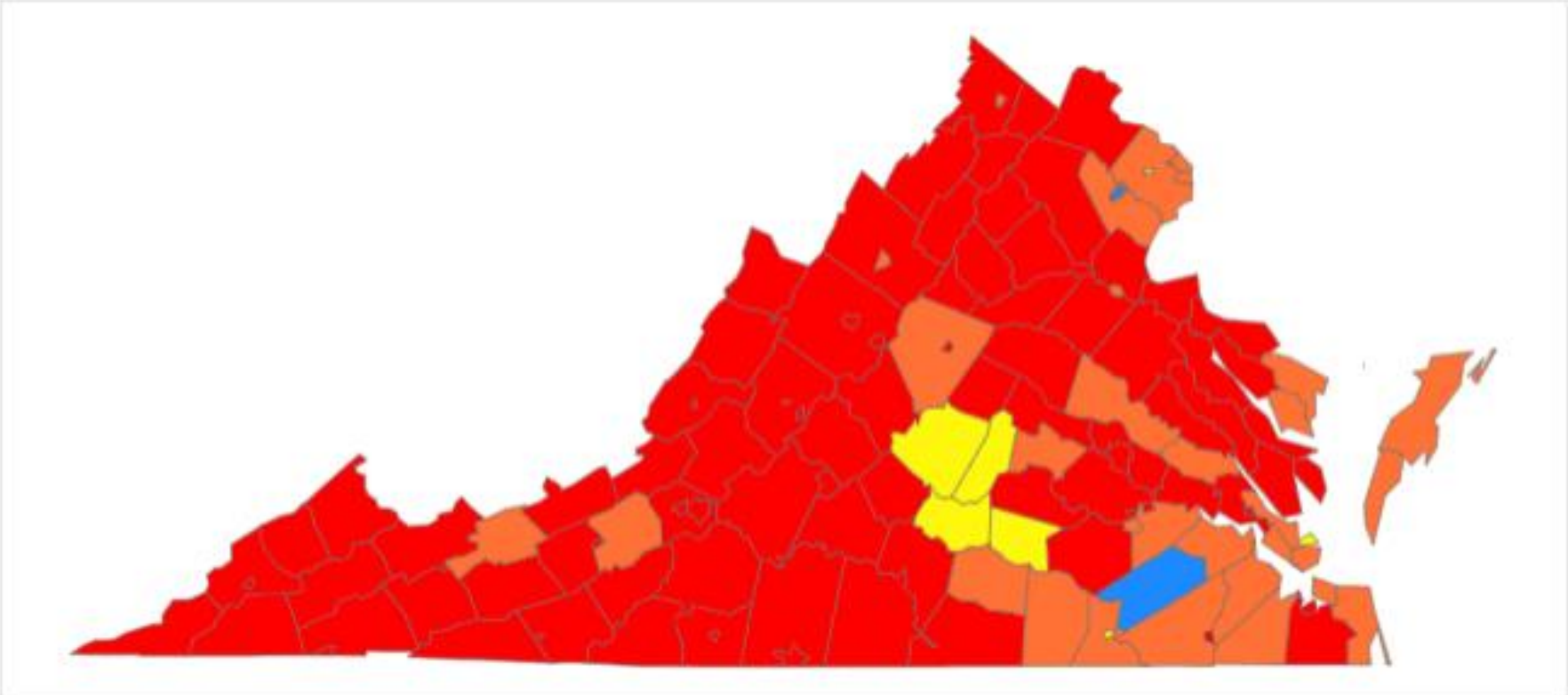
Burden	Level 0	Level 1	Level 2	Level 3	Level 4
New Cases	<10	10-49		50-100	>100
% Positivity	<3	3-5	5-8	8-10	>10
CLI ED Visits	<4		4-5.9		≥6

Symbol	Trend
↑	Increasing
↓	Decreasing
○	Fluctuating

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

Level of Community Transmission

Updated 12/1



Community Transmission Levels	Low Transmission	Moderate Transmission	Substantial Transmission	High Transmission
Total new cases per 100,000 persons in the past 7 days	0-9.99	10-49.99	50-99.99	≥100
Percentage of NAATs that are positive during the past 7 days	0-4.99%	5-7.99%	8-9.99%	≥10.0%

Literature Review: Emerging Omicron Variant

Updated 11/29

Update on Omicron: November 28, 2021

- WHO recently designated variant B.1.1.528, Omicron, as a variant of concern based on the potential for transmission, severe illness, and adaptability
- Early evidence on the Omicron variant suggest that individuals who have previously contracted COVID-19 may be at an increased risk of reinfection as compared to previous variants of concern
- Current studies demonstrate that current SARS-CoV-2 PCR diagnostics are be able to detect the Omicron variant but it is unclear if other tests possess the same ability, but research is ongoing

Scientists rapidly identified the Omicron variant. But firm answers about its impact could take weeks. November 28, 2021

- The Omicron variant contains 32 mutations in its spike protein, which can be associated with an increased ability to spread or circumvent immune protection due to vaccines greatest impact is on spike proteins
- Many studies are currently ongoing to understand the impact on transmission, severity of disease, and therapeutics but it will take weeks until a data report is ready; however early studies in South Africa have shown that Omicron is racing ahead of Delta and replacing it as the dominant variant
- In response to the risk many countries are now imposing travel restrictions to slow the spread of disease, however closing borders ultimately do not hold off the new variant but allows for time to get more individuals vaccinated and protected

Wary, weary world slams doors shut, fearing omicron variant: November 29, 2021

- In response to this new variant the US is banning travel from South Africa and seven other African countries
- NIH Director Dr. Francis Collins indicated no data suggests the new variant causes more serious illness than other variants however global consensus is mixed with most countries closing their borders or imposing travel restrictions to many African countries (Japan, Israel, Morocco, Britain, India, Brazil, Canada) while others remain open (New Zealand, Malaysia)
- Emergent omicron cases in Portugal and Scotland may indicate that community transmission is already circulating outside of the epicenters first reported in South Africa and other African countries

WHO flags global risk from Omicron, countries tighten curbs: November 29, 2021

- Portugal, Scotland, and Austria have all confirmed Omicron variant cases, and some cases have no travel connection or travel history to Southern Africa
- Despite its rapid spread across the world, the WHO has reported no deaths linked to the new Omicron variant
- Scientists believe existing COVID-19 vaccines may be effective at stopping Omicron from causing severe illness, however, more research will be needed before anything definitive can be confirmed regarding susceptibility or disease severity

Literature Review: COVID-19 Entering Endemic Phase

Updated 11/18

The Coronavirus is Here to Stay: February 16, 2021

- 90% of infectious-diseases researchers and immunologists polled see an endemic future for COVID-19
- Immune escape, waning immunity, and uneven vaccine distribution are three driving factors that will determine COVID-19 in reaching endemicity

Country by Country, Scientists Eye Beginning of an End to the COVID-19 Pandemic: November 3, 2021

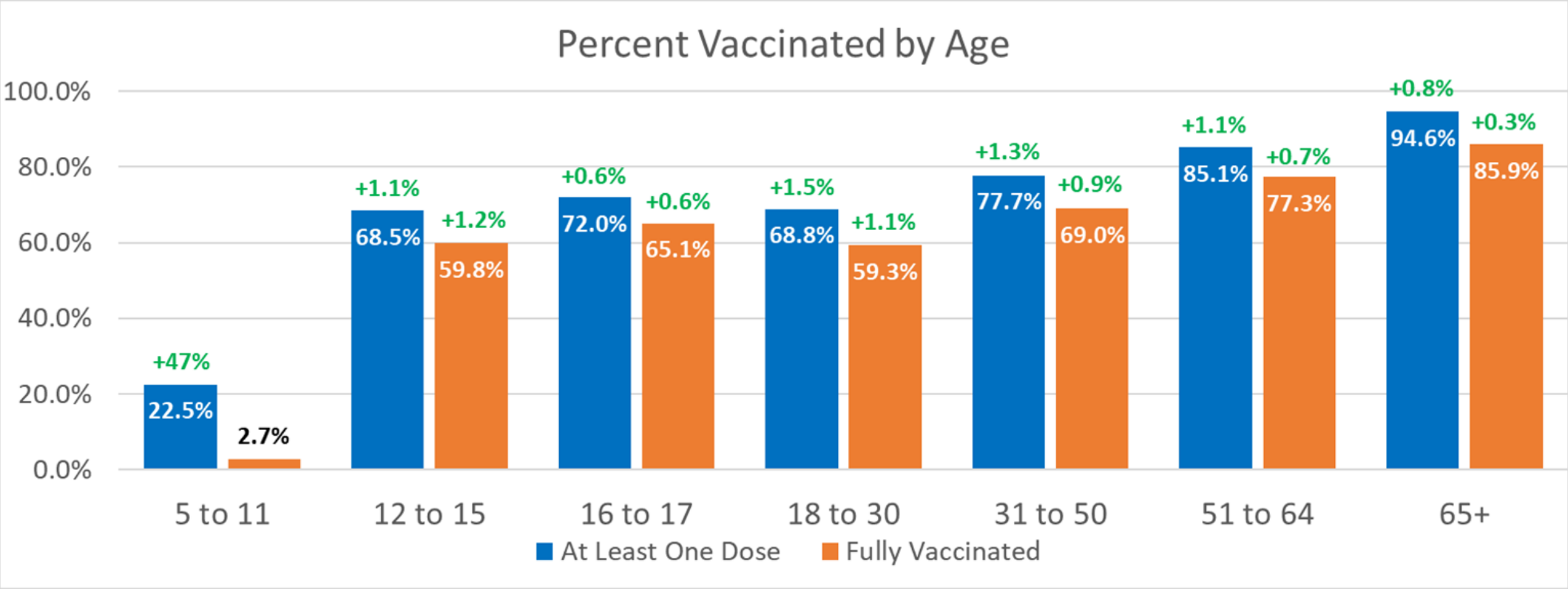
- Most experts conclude COVID-19 will evolve into a more seasonal respiratory disease however the transition to its severity may be driven by overall immunity in the population and vaccine distribution
- As COVID-19 continues to mutate some predict a milder winter wave followed by a transition to endemic disease in 2022-2023, resulting in 50,000 to 100,000 U.S. COVID-19 deaths a year
- All of this is dependent on no new COVID-19 variants emerging that can evade our vaccines and prior immunity from infection

How SARS-CoV-2 in American deer could alter the course of the global pandemic: November 10, 2021

- Studies have found that COVID spreads explosively in white-tailed deer, nearly 40% of the deer tested in the Midwest and Northeast have COVID antibodies from prior infections
- COVID was most likely transmitted to the white-tailed deer population by humans, but it remains unknown if the virus can transmit back to humans in zoonotic transmission
- Eradicating the virus in the US would become impossible if deer are able to transmit COVID back into humans and cause a breeding reservoir for new and potentially more dangerous strains

Virginia: Vaccination by Age Groups

Updated 12/1



- **64.8%** **(+1.5%)** of the Total Population has been Fully Vaccinated
  - **68.9%** **(+1.5%)** of the Eligible (5+)

- **85.9%** **(+1.5%)** of the Adult (18+) Population Vaccinated with at Least One Dose
  - **94.6%** **(+1.1%)** of Virginians 65+
  - **22.5%** **(+47%)** of 5 to 11 year olds

Green percent represents percent increase from two weeks prior

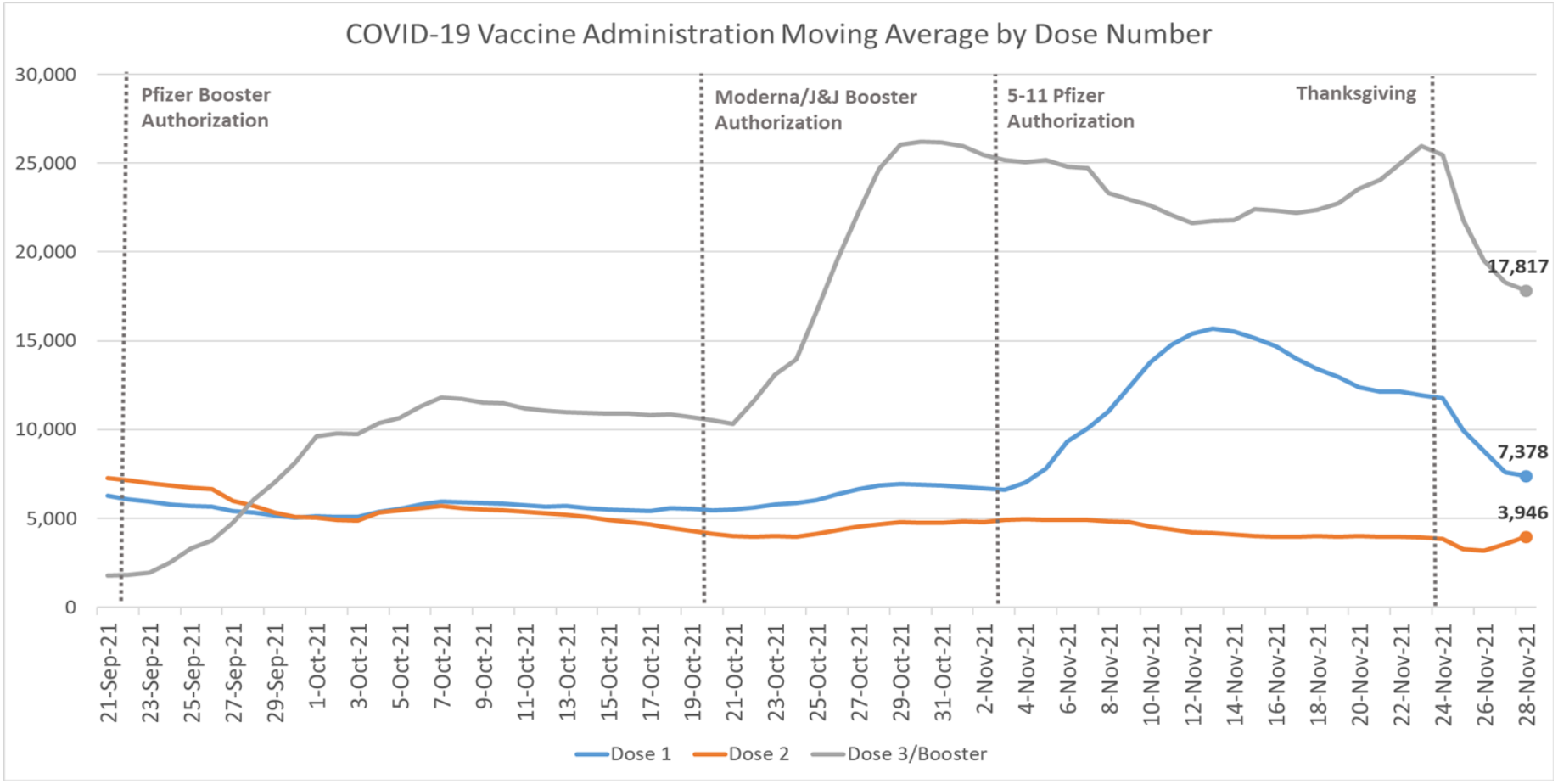
Source: COVID-19 in Virginia: Vaccine Summary, Keep Virginia Safe Tournament | Metaculus

Virginia: Vaccination Administrations declined during the Holiday Period

Updated 12/1

Thanksgiving led to a drop in administrations, but there has been a rebound early this week

- First Dose administrations are decreasing following the initial 5-11 wave of vaccinations
- Second Dose Administrations remain relatively constant, but are expected to increase due to 5-11 year olds becoming eligible for their second dose
- Third Dose/Booster administrations saw an increase leading up to Thanksgiving and have since dropped significantly



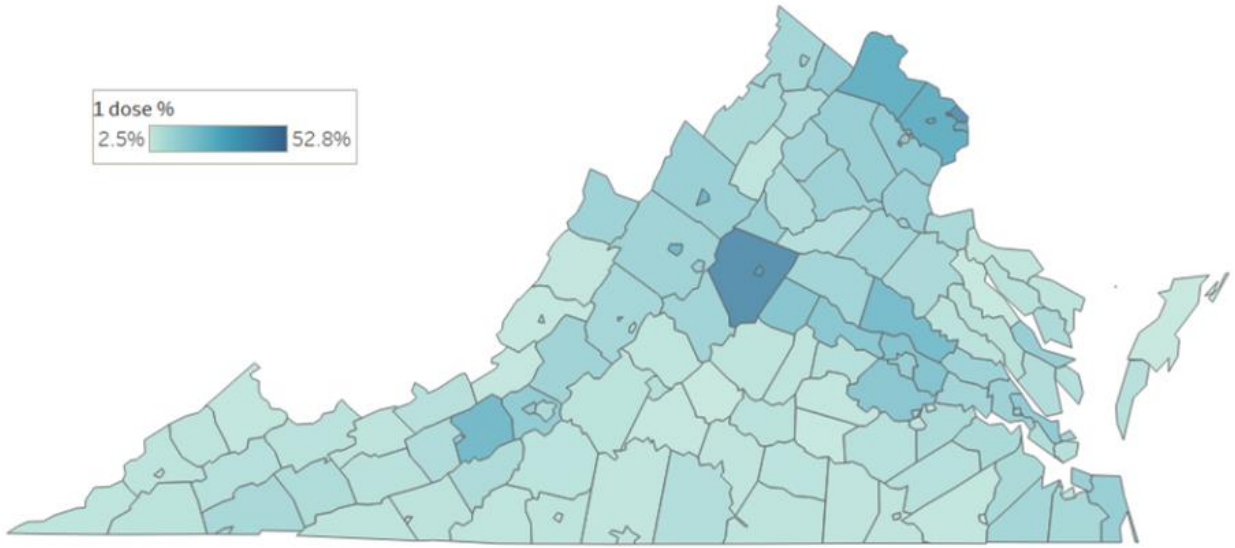
Federal doses not included in this number
Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)

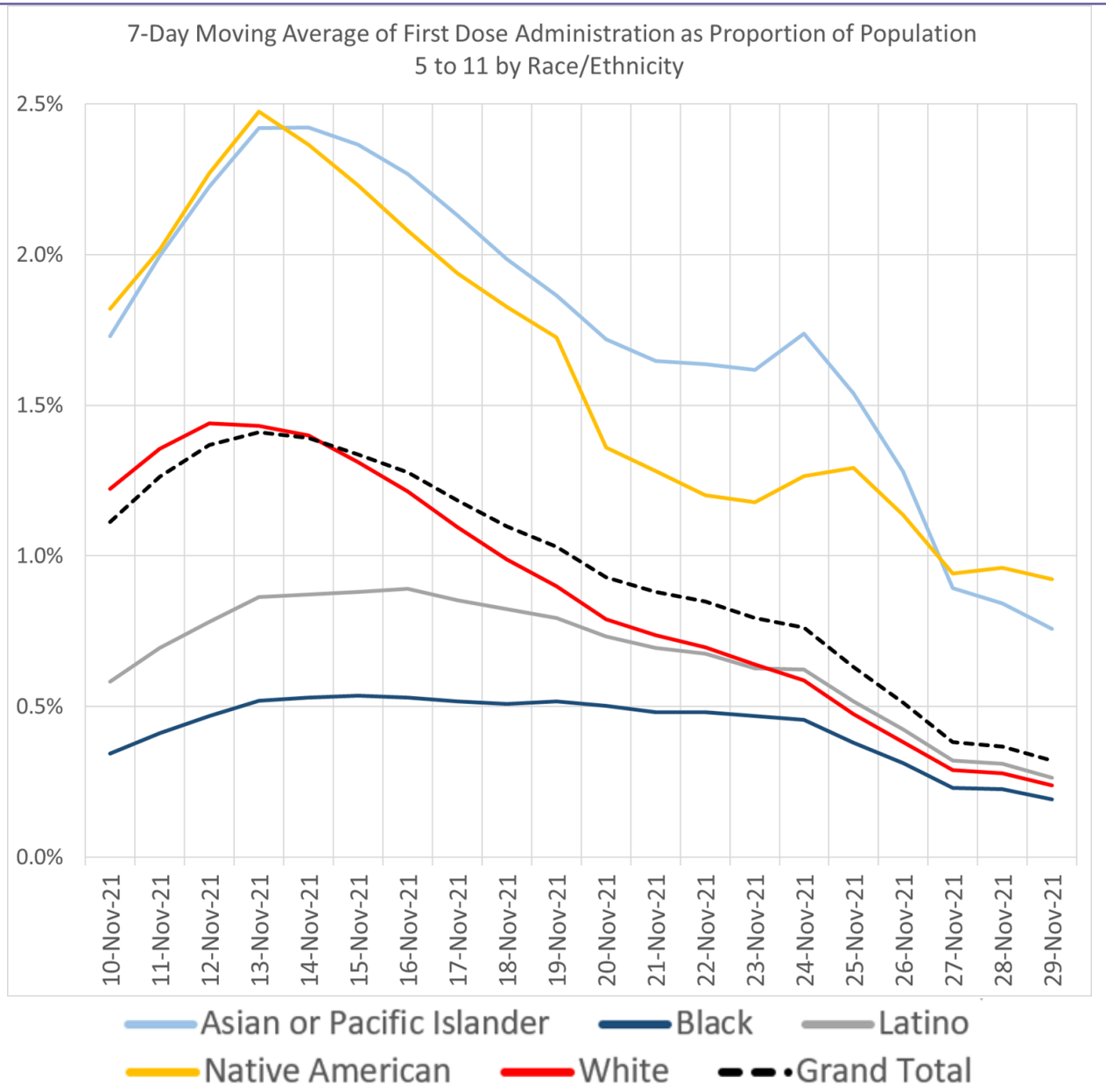
Virginia: 5 to 11 Administrations by Geography and Race/Ethnicity

Updated 12/1

5-11 First Dose Administration Declining as Disparities Persist

- First Dose Vaccination Rates Shows Large Geographic Disparity
  - Broad range from 2.5% to 52.8% first dose vaccination rate by locality
  - Geographic trend similar to other age groups, but is more pronounced in 5 to 11 year olds
- After an initial spike in the first week of vaccinations, have seen a steady decline across all race/ethnicity groups
  - Pattern mirrors the prior trend in 12 to 15 year old vaccination



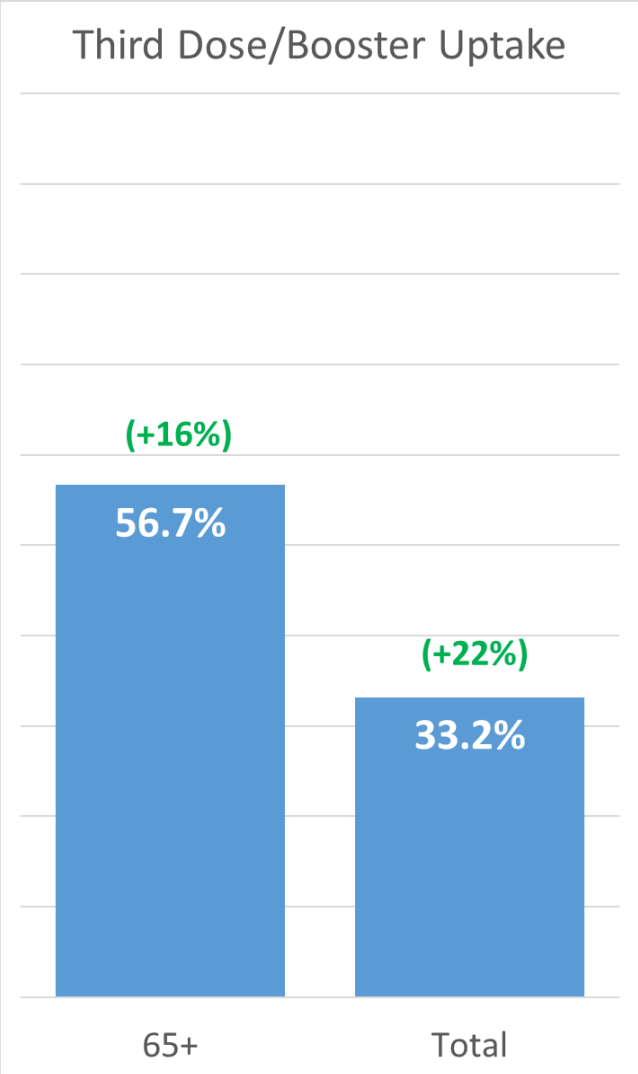


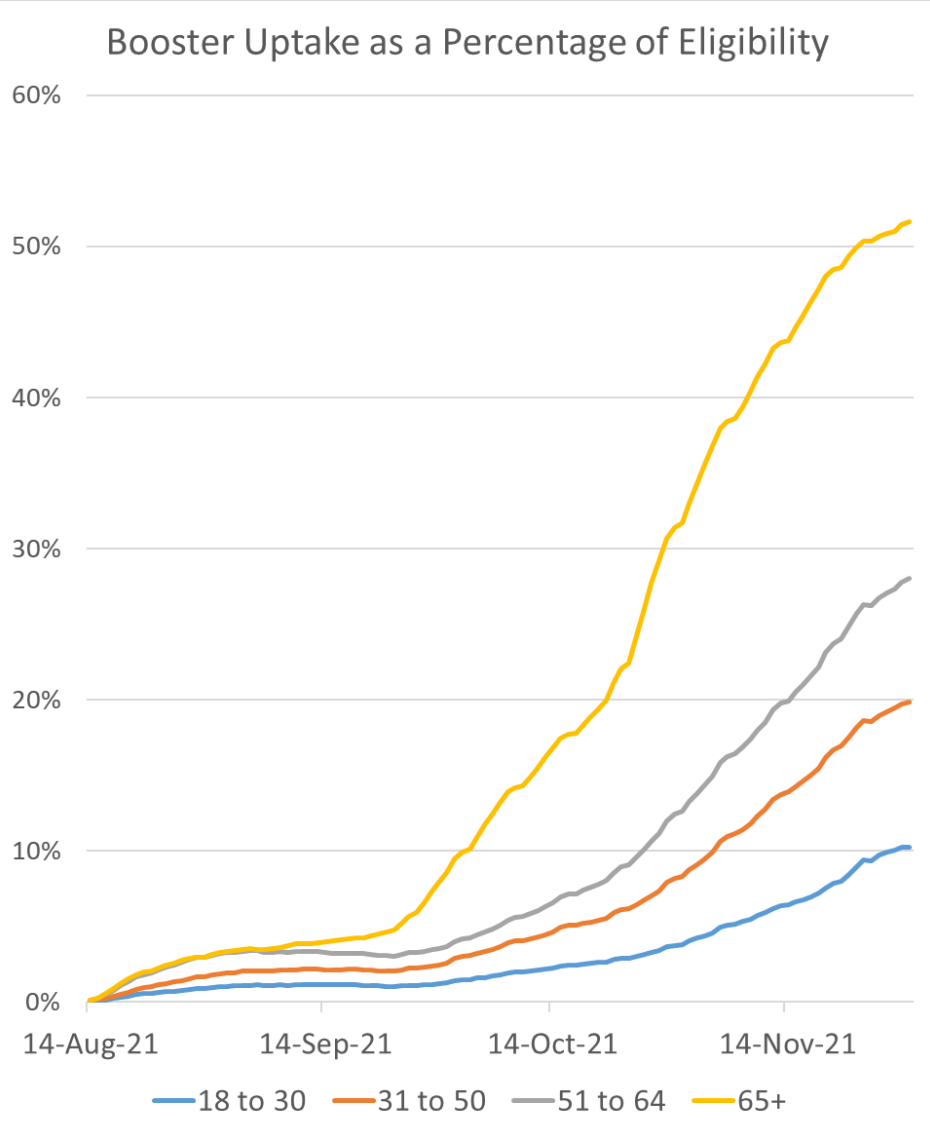
Federal doses not included in this number
Source: [COVID-19 Vaccine Summary – Coronavirus (virginia.gov)]

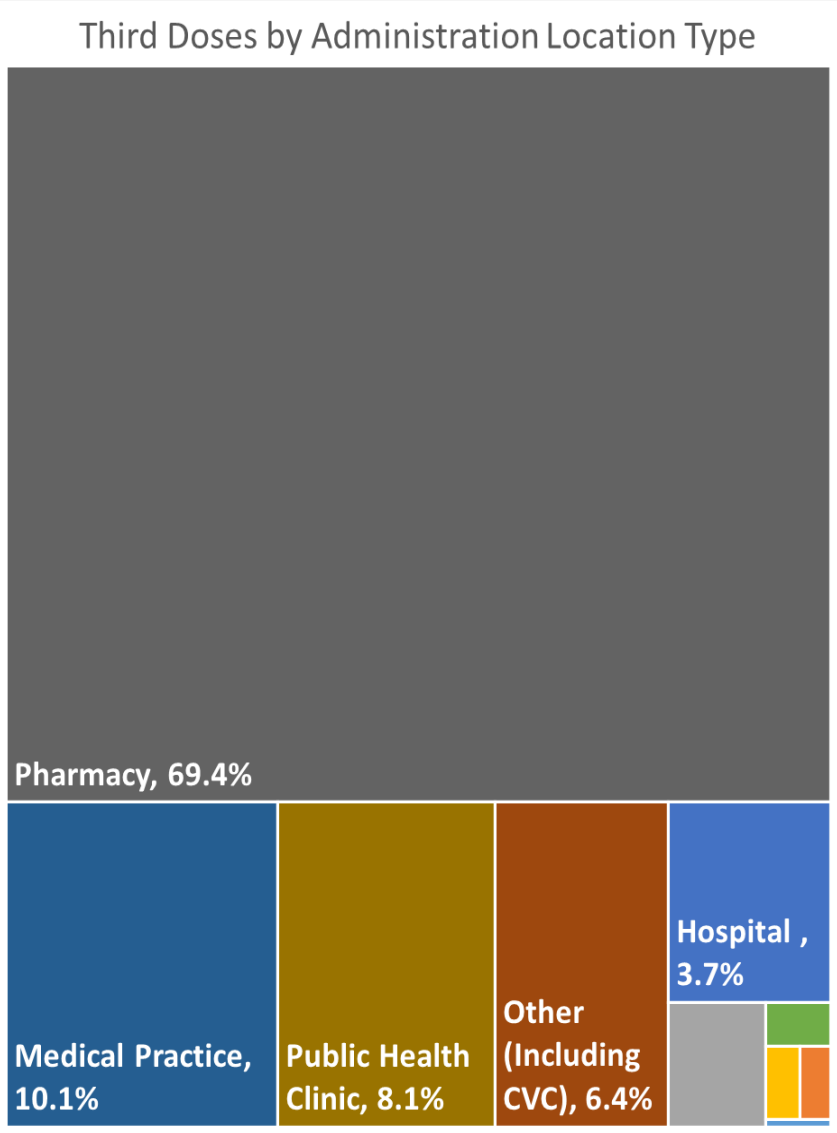
Virginia: Third Dose/Booster Uptake is Highest amongst Older Groups

Updated 12/1

Third Dose/Booster uptake ranges from 57% for 65+ to 13% for 18-30 year olds, with most shots being administered at Pharmacies





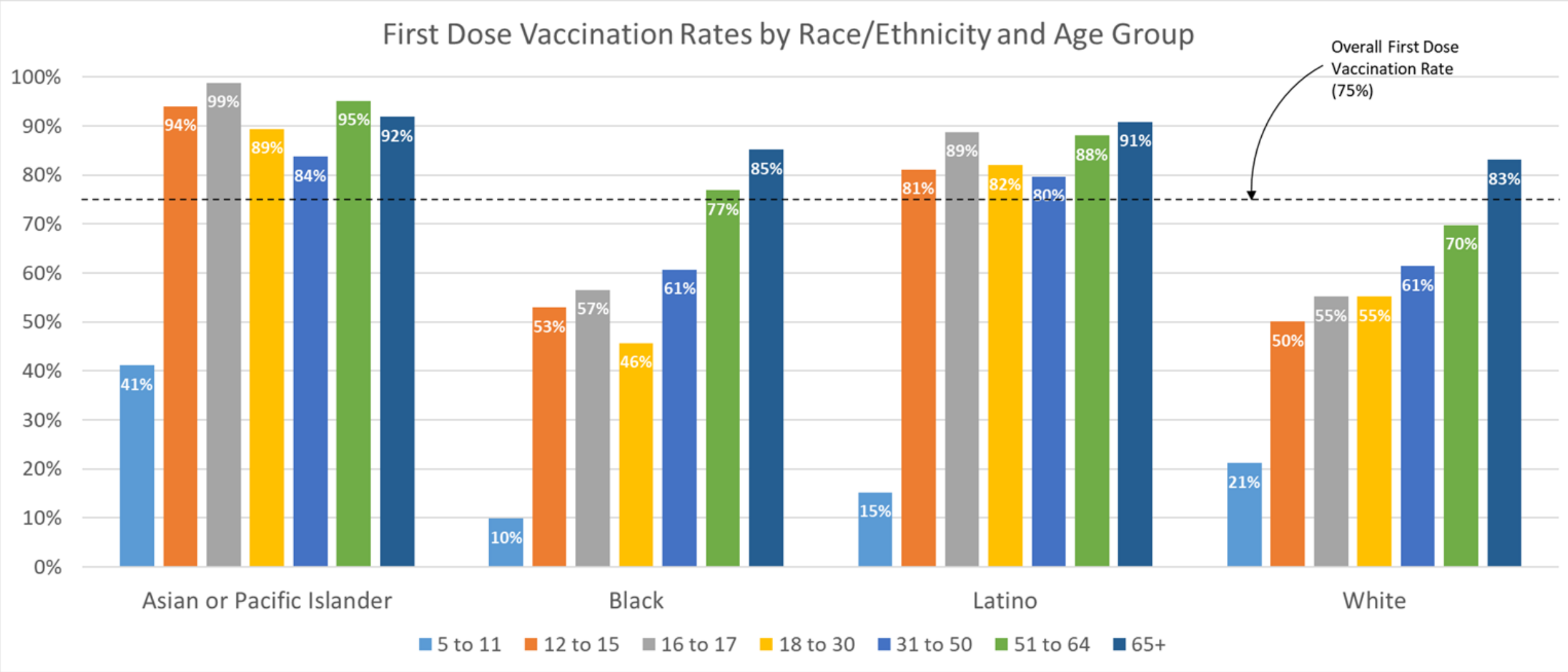


Green percent represents increase over 2 weeks
Federal doses not included in this number
Source: [COVID-19 Vaccine Summary – Coronavirus (virginia.gov)]

Virginia: Vaccination by Race/Ethnicity and Age

Updated 12/1

All Age and Race/Ethnicity groups have achieved Parity with the White Population with the exception of the 18-30 year old Black Population, and Latino and Black Children aged 5 to 11

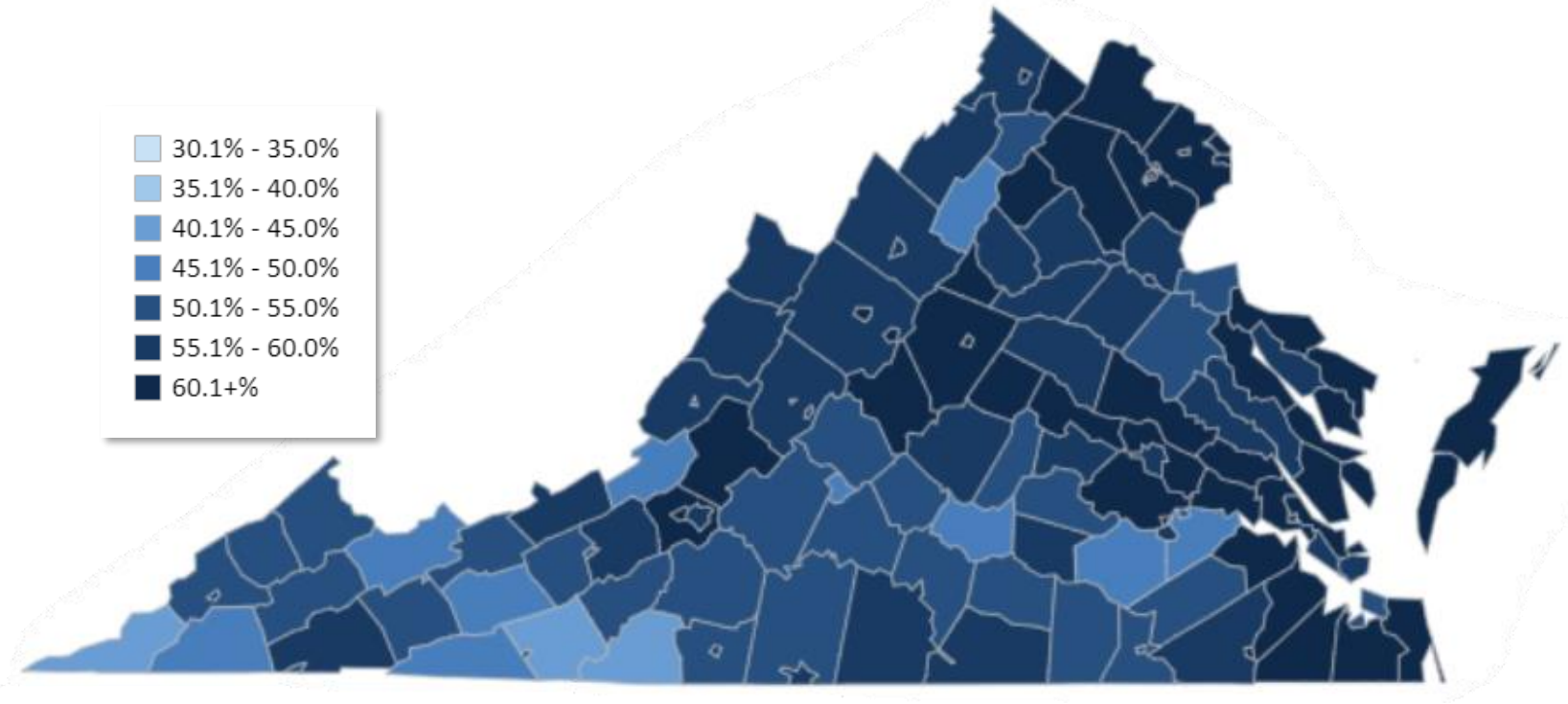


Source: [COVID-19 Vaccine Summary – Coronavirus (virginia.gov)]

Virginia: Vaccination across the Commonwealth by Geography

Updated 12/1

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



First Dose Vaccination Rate by Region for Total Population

Region Name	1st Dose Vaccination	% Change 2 Weeks
Central	62.8%	+1.6%
Eastern	59.9%	+1.7%
Northern	74.3%	+2.3%
Northwest	60.9%	+1.8%
Southwest	53.9%	+1.4%

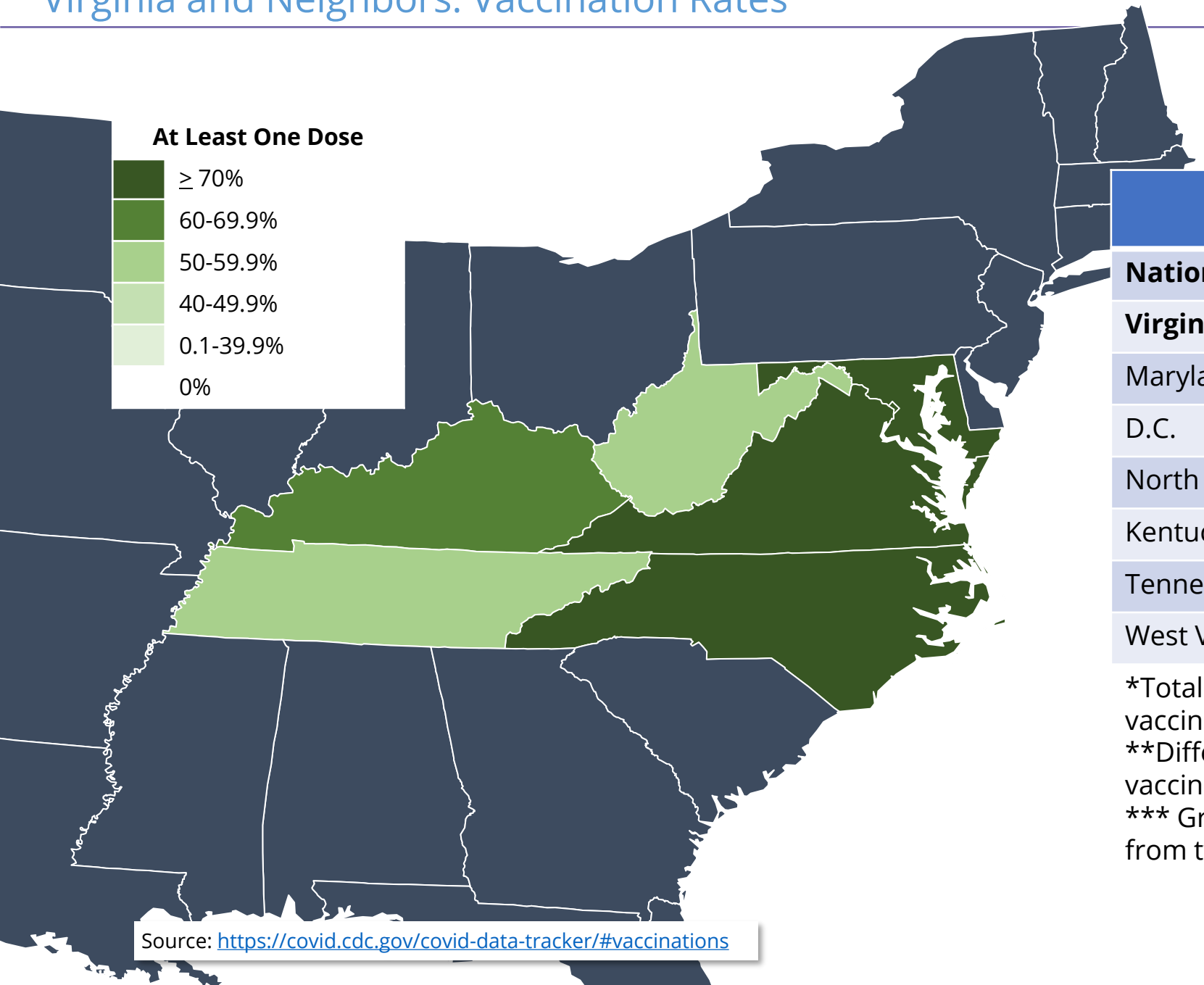
2013 SRHP Isserman Classification	5 to 11	12 to 17	16 to 17	18 to 30	31 to 50	51 to 64	65+	Grand Total
Mixed Urban	25%	69%	75%	70%	71%	82%	86%	**63%**
Urban	23%	71%	77%	62%	74%	83%	95%	**72%**
Mixed Rural	17%	50%	56%	54%	61%	72%	82%	**59%**
Rural	9%	41%	47%	49%	55%	68%	91%	**71%**
Grand Total	**20%**	**63%**	**69%**	**61%**	**69%**	**78%**	**89%**	**68%**

- 30 (+5 over 2 weeks) out of 133 Localities have a first dose vaccination rate above 65%
- 14 (-7 over 2 weeks) out of 133 Localities have a first dose vaccination rate below 50%
- There is a disparity across Urban and Rural areas by Age Groups, with Rural Adolescents the Lowest Vaccinated group

Federal doses not included in this number
Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)

Virginia and Neighbors: Vaccination Rates

Updated 12/1



	At Least One Dose*	Fully Vaccinated*
Nationwide	**70.2%** (+2.3%)	**59.4%** (+0.8%)
Virginia**	**75.6%** (+2.7%)	**64.9%** (+1.2%)
Maryland	76.9% (+3.9%)	67.6% (+1.2%)
D.C.	81.6% (+4.5%)	64.5% (+1.4%)
North Carolina	70.3% (+4.1%)	54.2% (+1.1%)
Kentucky	60.3% (+2.4%)	52.1% (+1.2%)
Tennessee	56.8% (+1.8%)	49.5% (+1.2%)
West Virginia	53.9% (+0.4%)	41.5% (+0.0%)

*Total population, includes out-of-state vaccinations
**Differs from previous slide because all vaccination sources (e.g., federal) are included
*** Green percent represents percent increase from two weeks prior

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