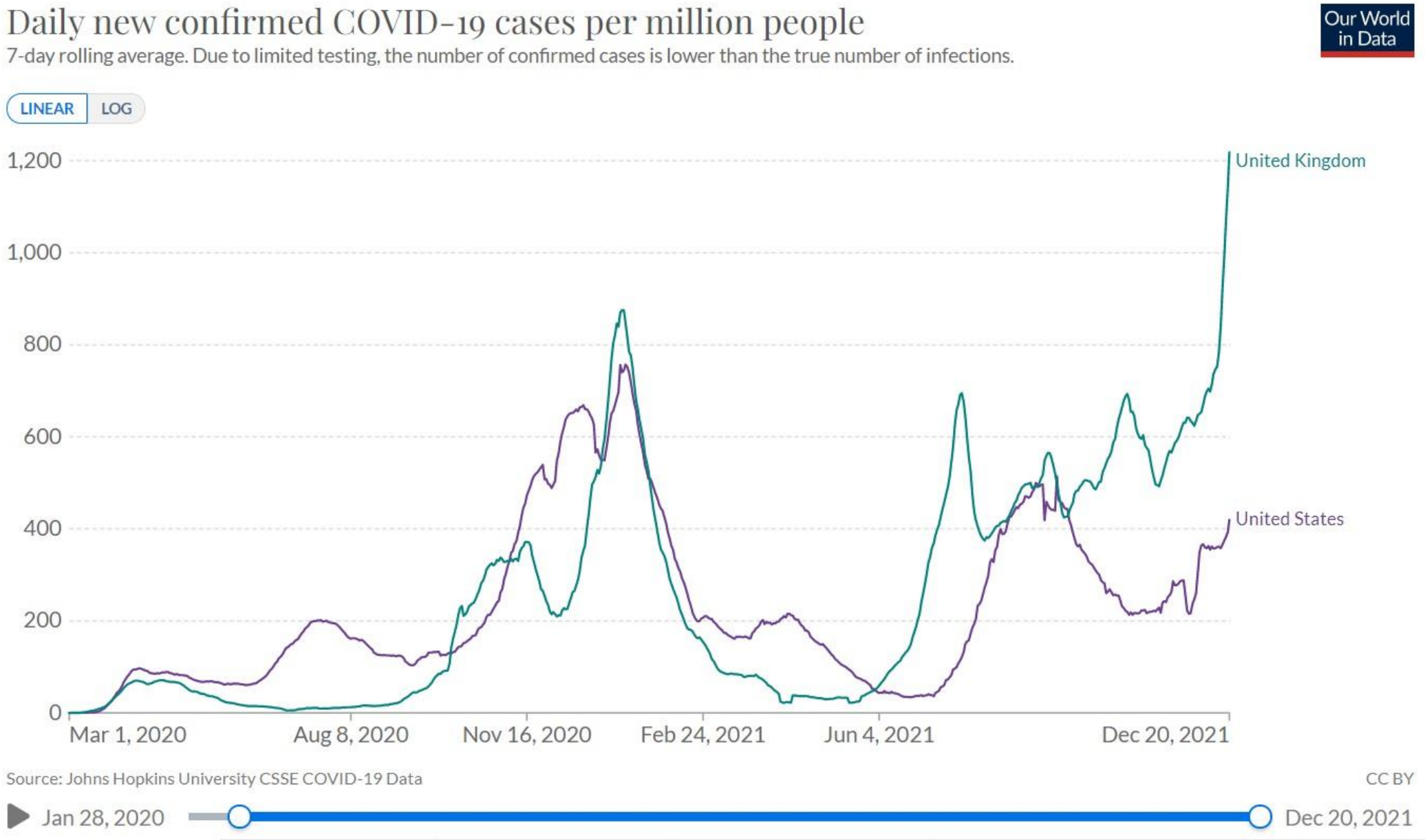
Virginia
COVID-19 Surveillance Data Update

December 22, 2021

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

Daily New Confirmed Cases in U.S. and U.K.

Updated 12/21

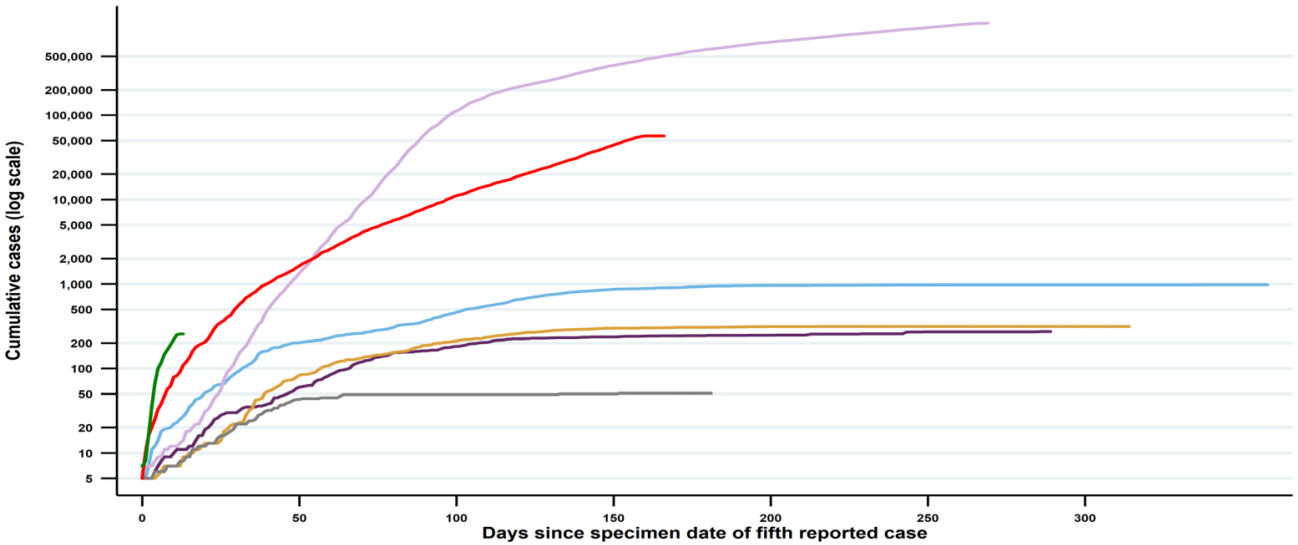


Source: Our World in Data

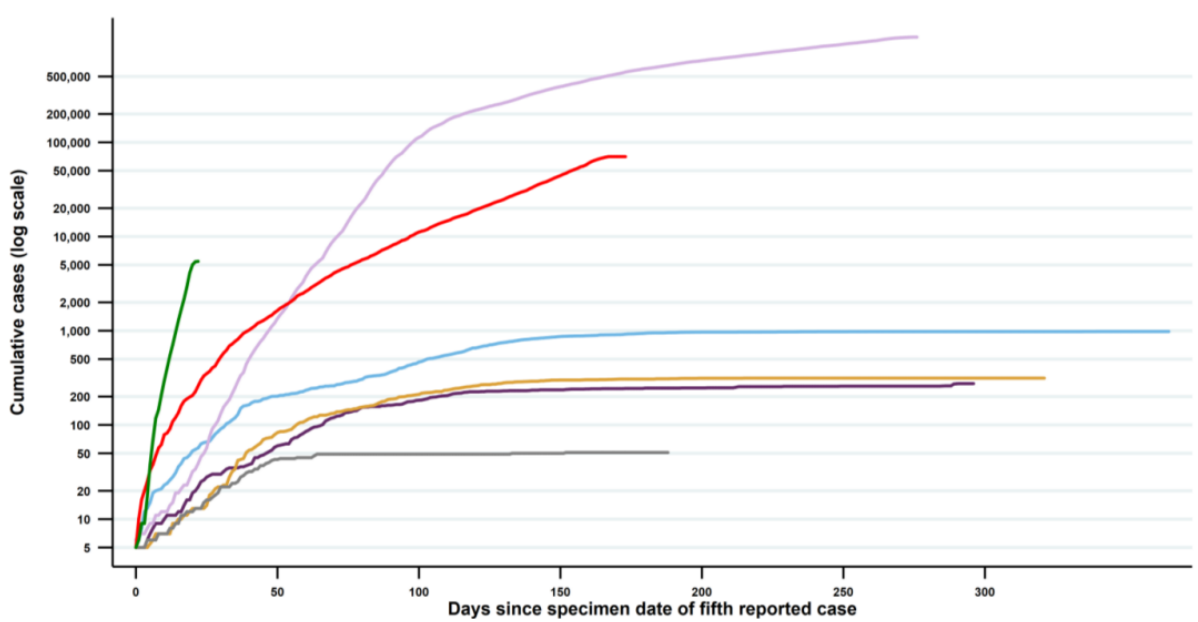
Cumulative COVID Cases in England Grouped by Variant

Updated 12/13

256 Cumulative Omicron Cases (as of 12/5)

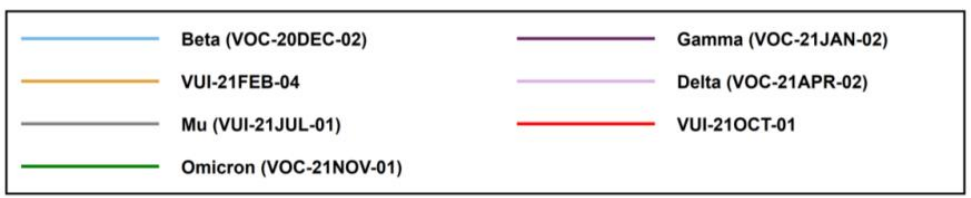


5,455 Cumulative Omicron Cases (as of 12/13)



COVID Context:

- In the United Kingdom, **cases** since last week **increased** to 83,526 (7-day MA) per day (+61%)
- Approximately 69% of UK's population is fully vaccinated compared to 61% of US population



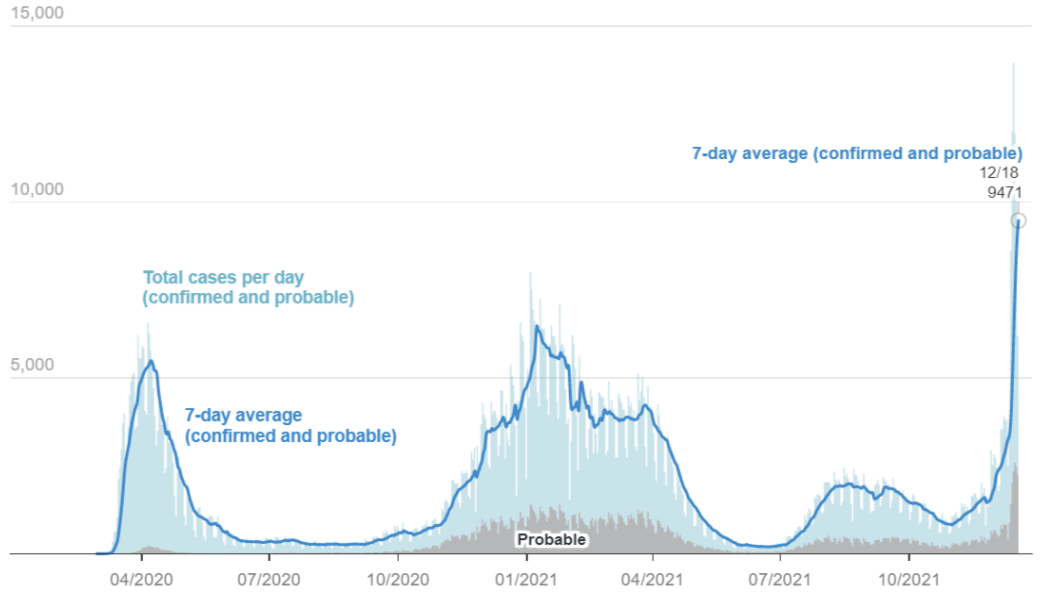
"Variants under Investigation"
Mu (VUI-21JUL-01)
VUI-21OCT-01
VUI-21FEB-04

Source: Investigation of SARS-CoV-2 variants: technical briefings - GOV.UK (www.gov.uk); Cases in the UK | Coronavirus in the UK (data.gov.uk); Coronavirus (COVID-19) Vaccinations - Statistics and Research - Our World in Data

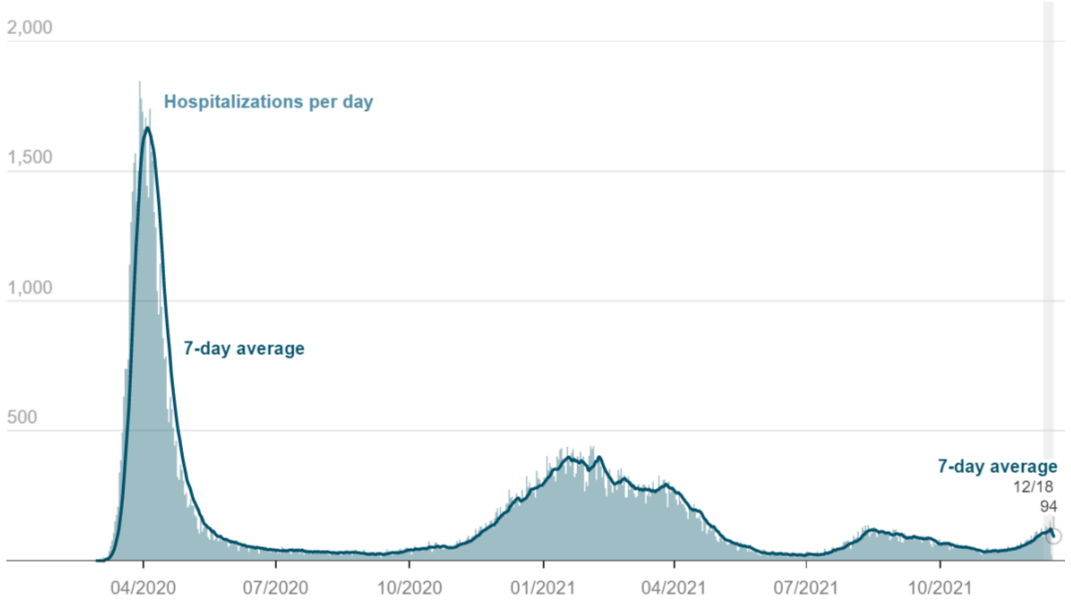
New York City Cases Increasing as Omicron Prevalence Overtakes Delta

Updated 12/21

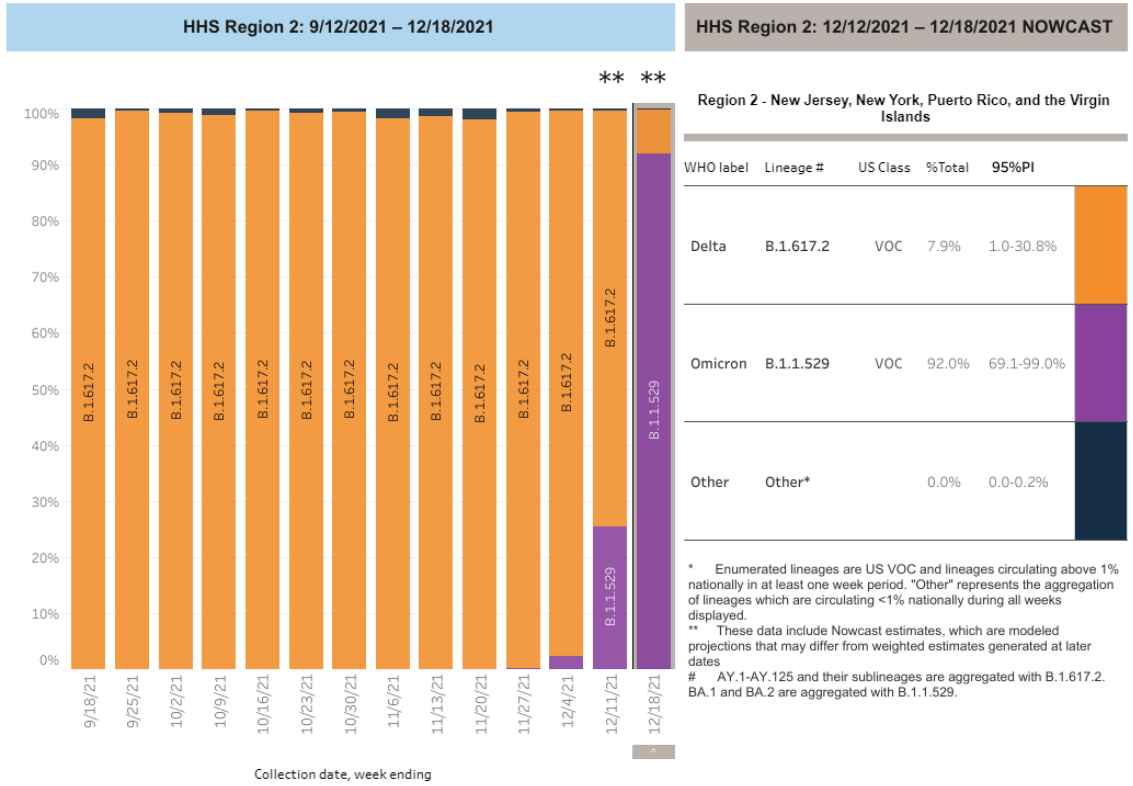
Compared to last week, NYC Cases increased to 9,471 (7-day MA) (+187%)



Compared to last week, NYC hospitalizations decreased to 94 (7-day MA) (-12%)



92% of cases sequenced in Region 2 (NJ, NY) are Omicron



Region 2 - New Jersey, New York, Puerto Rico, and the Virgin Islands

WHO label	Lineage #	US Class	%Total	95%PI
Delta	B.1.617.2	VOC	7.9%	1.0-30.8%
Omicron	B.1.1.529	VOC	92.0%	69.1-99.0%
Other	Other*		0.0%	0.0-0.2%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

AY.1-AY.125 and their sublineages are aggregated with B.1.617.2. BA.1 and BA.2 are aggregated with B.1.1.529.

Source: COVID-19: Data Trends and Totals - NYC Health; CDC COVID Data Tracker

Federal Response to Omicron

Updated 12/21

President Biden Announces New Actions to Battle Omicron: December 21, 2021

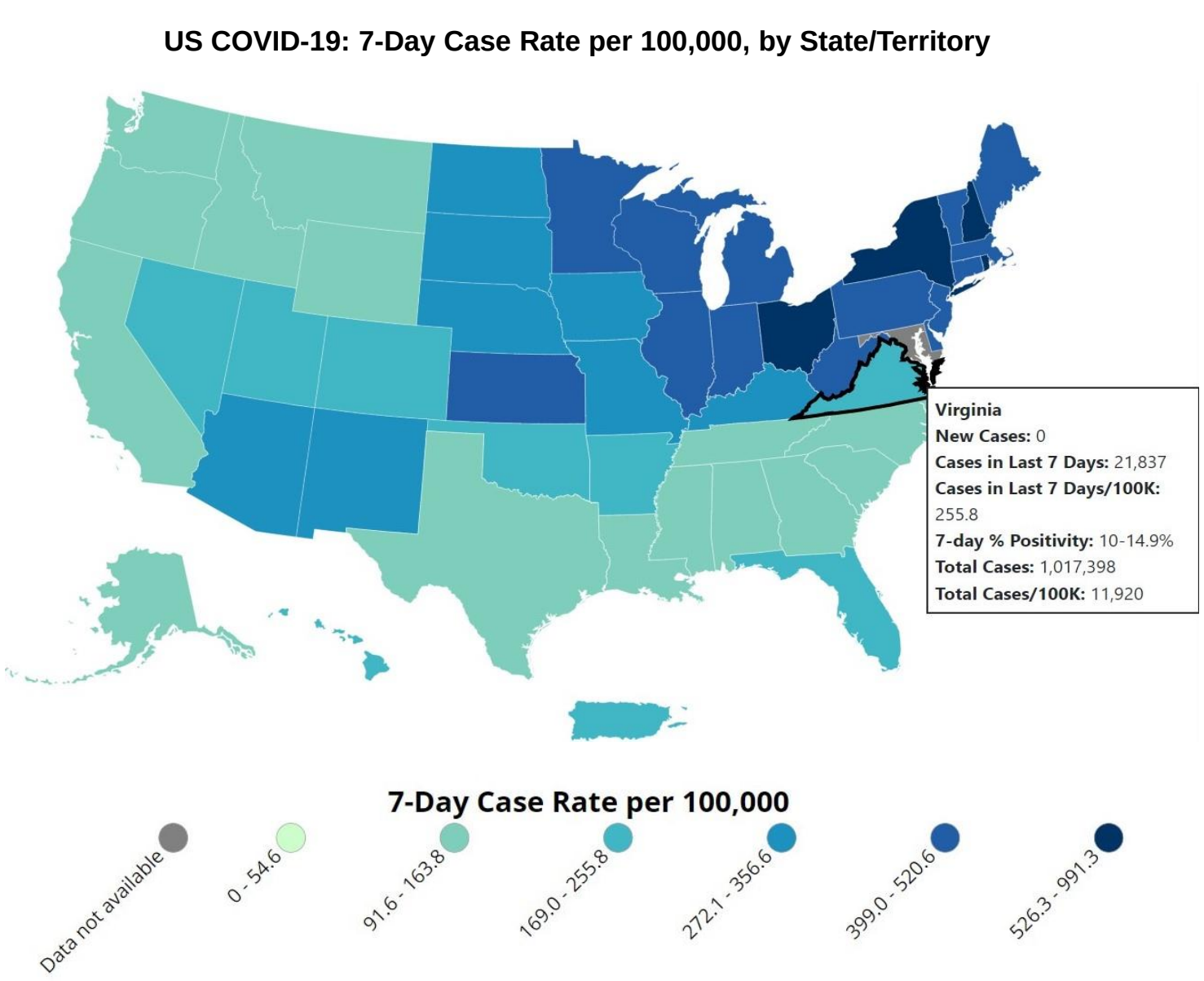
President Biden announced the following actions to mobilize national and state leaders in responding to Omicron:

- Additional Medical Personnel – mobilizing 1,000 troops to hospitals and emergency response teams to states
- Expanding hospital capacity – Preparing FEMA to deploy ambulances, response teams and surge facilities to states
- Providing Critical Supplies – Masks, gloves and ventilators ready to supply to states if needed
- Increasing Access to Free Testing – new federal testing sites, free rapid tests for delivery
- Expanding vaccination sites – new pop-up vaccination clinics, scaling pharmacy capacity

Source: FACT SHEET: President Biden Announces New Actions to Protect Americans and Help Communities and Hospitals Battle Omicron | The White House

National: Weekly COVID-19 Case Rate

Updated 12/21



	Cases in the Last 7 Days Per 100k Population
Virginia	255.8 (+20.7%)
U.S.	279.7 (+12.8%)
New York City*	673.6 (+113.2%)
New York	536.1 (+20.7%)
New Hampshire	632.5 (-3.3%)
Ohio	528.8 (+20.2%)

Our Neighbors

Rates Higher than Virginia

West Virginia, **410.6** (+7.2%)
District of Columbia, **356.6** (+79.2%)
Kentucky, **330.9** (-4.1%)

Rates Lower than Virginia:

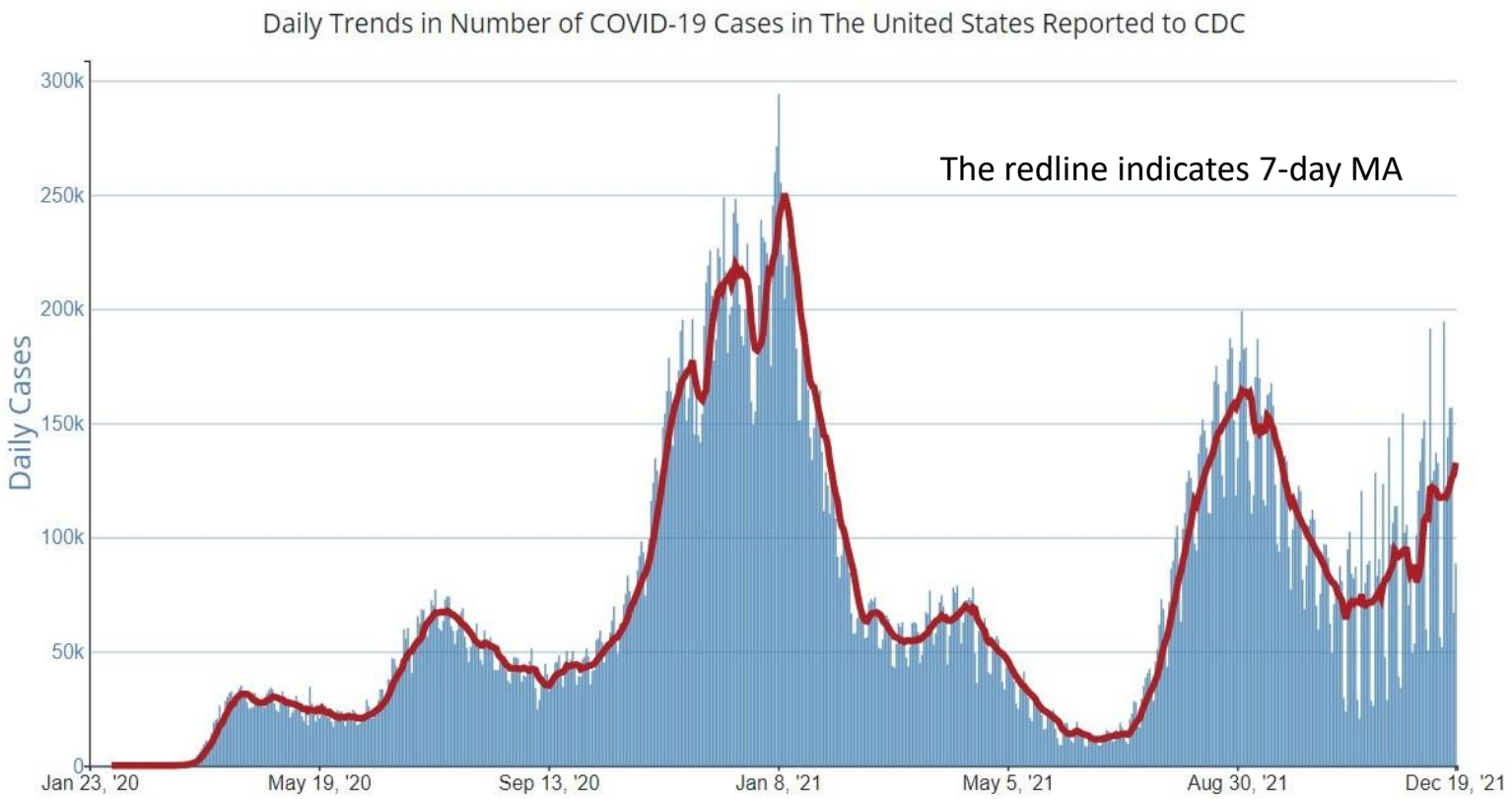
North Carolina, **138.8** (-25.4%)
Tennessee, **143.2** (-21.7%)

*Maryland, **N.A.**

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

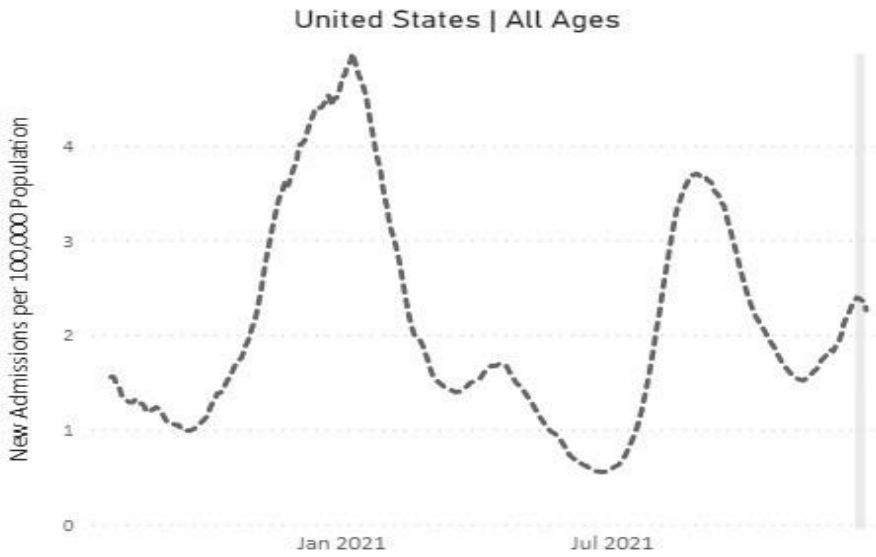
National: Cases, Hospitalizations, and Deaths

Updated 12/21



- Compared to last week, **cases** increased to 132,659 (7-day MA) per day (+12.9%)
  - 47% lower than the January peak of 2021
  - 19% lower than the September high of 2021
- **Hospitalizations** decreased to 7,802 (7-day MA) per day (-1.8%)
- **Deaths** increased to 1,169 per day (+3.4%)

Hospitalization Trends

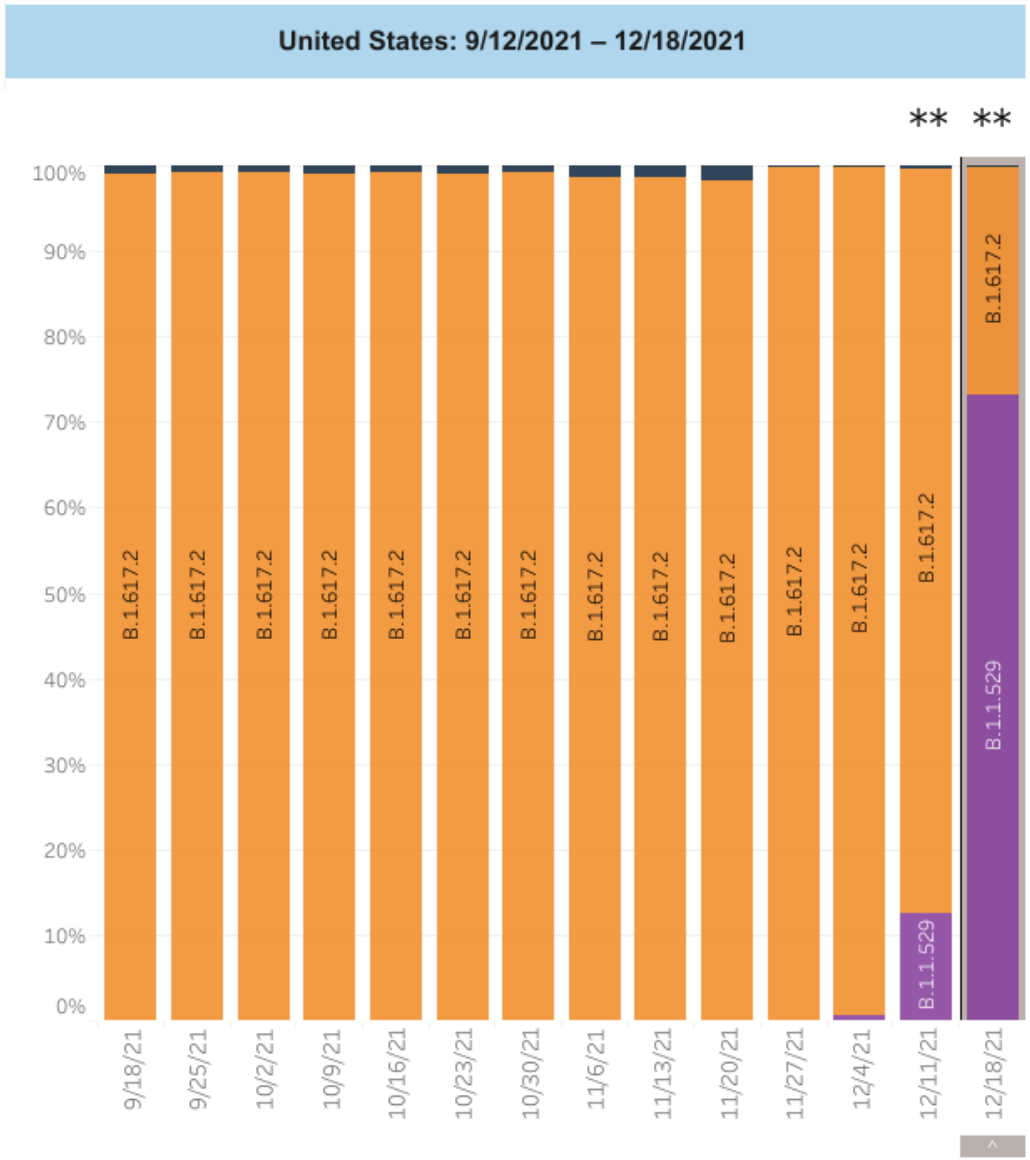


Source: CDC COVID Data Tracker

Early Estimates of US and Virginia Omicron Prevalence

Updated 12/21

National Omicron Prevalence: 12.6 to 73.2% in a week



United States: 12/12/2021 – 12/18/2021 NOWCAST

USA

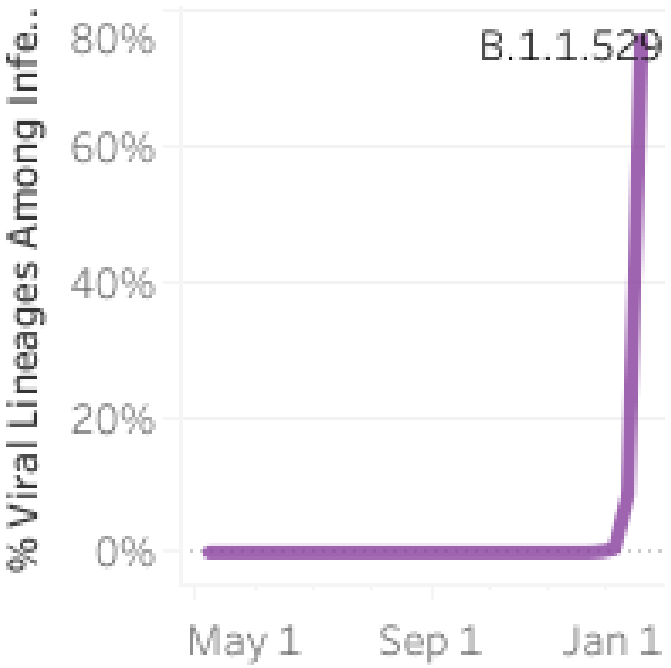
WHO label	Lineage #	US Class	%Total	95%PI
Delta	B.1.617.2	VOC	26.6%	5.1-65.8%
Omicron	B.1.1.529	VOC	73.2%	34.0-94.9%
Other	Other*		0.1%	0.0-0.4%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

AY.1-AY.125 and their sublineages are aggregated with B.1.617.2. BA.1 and BA.2 are aggregated with B.1.1.529.

Projected 76% of specimens collected in Region 3 (DE, DC, MD, VA, WV) are Omicron

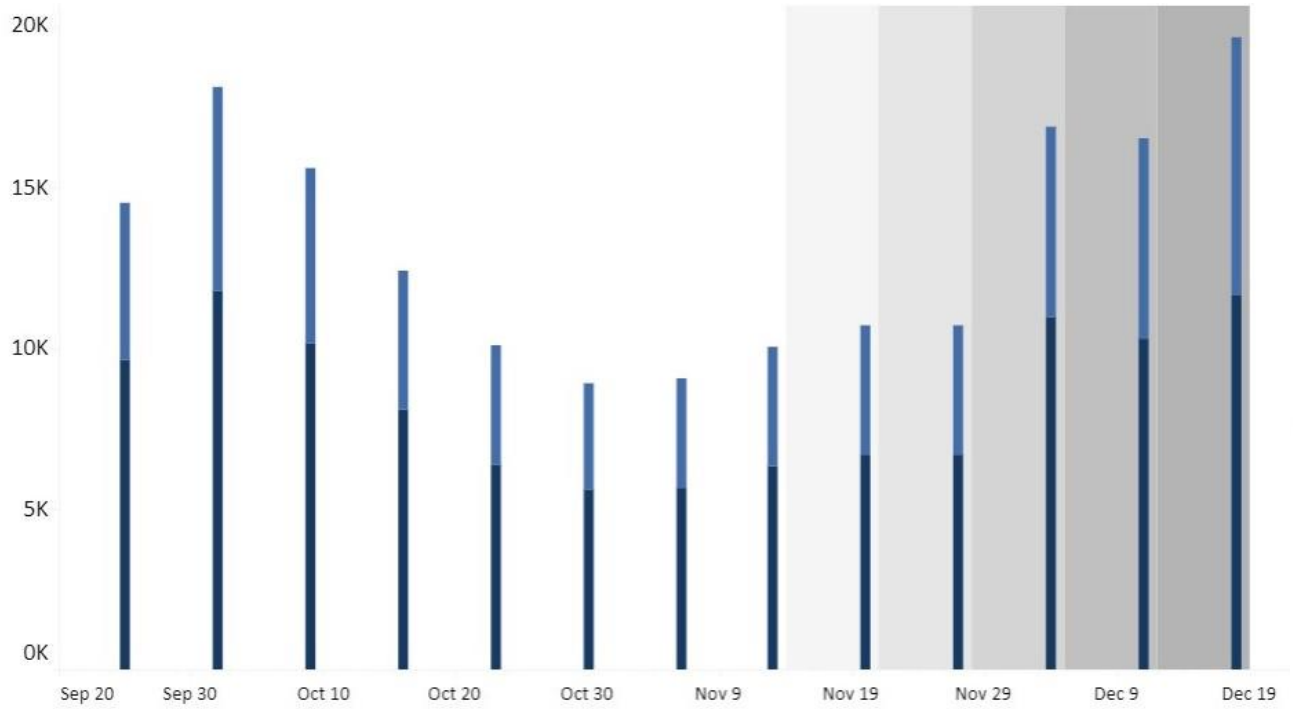


Source: CDC Variant Tracking

Virginia: Cases, Hospitalizations, and Deaths

Updated 12/21

Cases by Date of Symptom Onset, Past 13 weeks



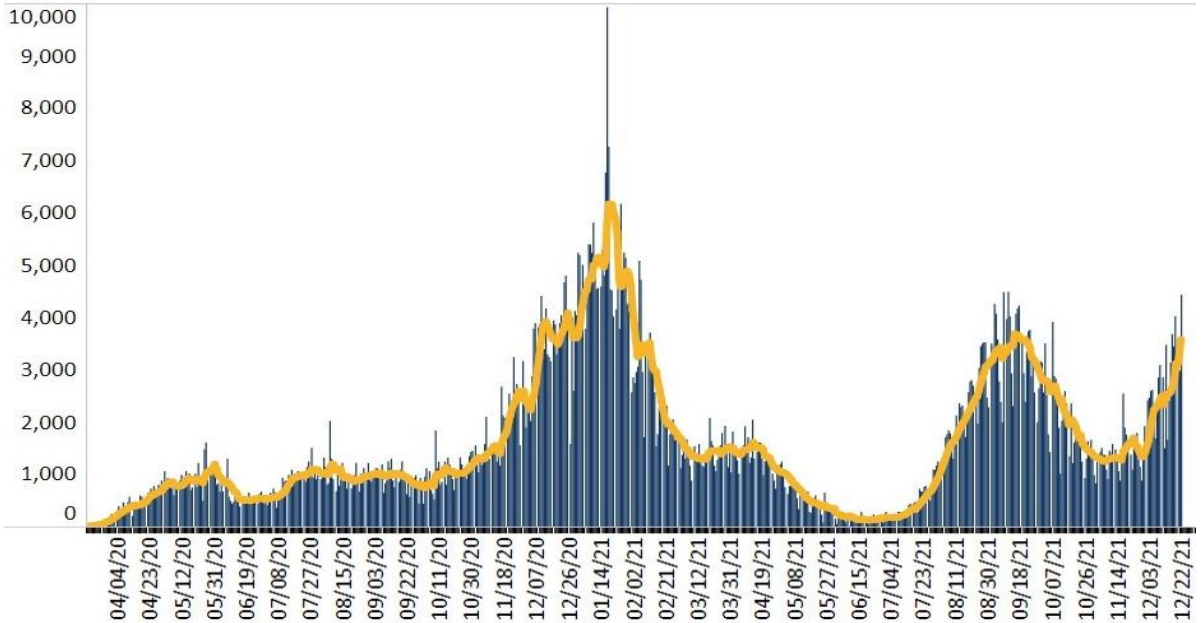
Gray shaded area illness may not have been reported yet

Compared to last week, **cases increased** to 3,575 (7-day MA) from 2,545 per day (+40.5%)

- 42% lower than the January peak of 2021
- 3% lower than the September high of 2021

- **Hospitalizations** increased to 1,431 per day (+13.7%)
- **Deaths** decreased to 26 per day (-6.1%)

Cases by Date Reported, All Reporting Timeline

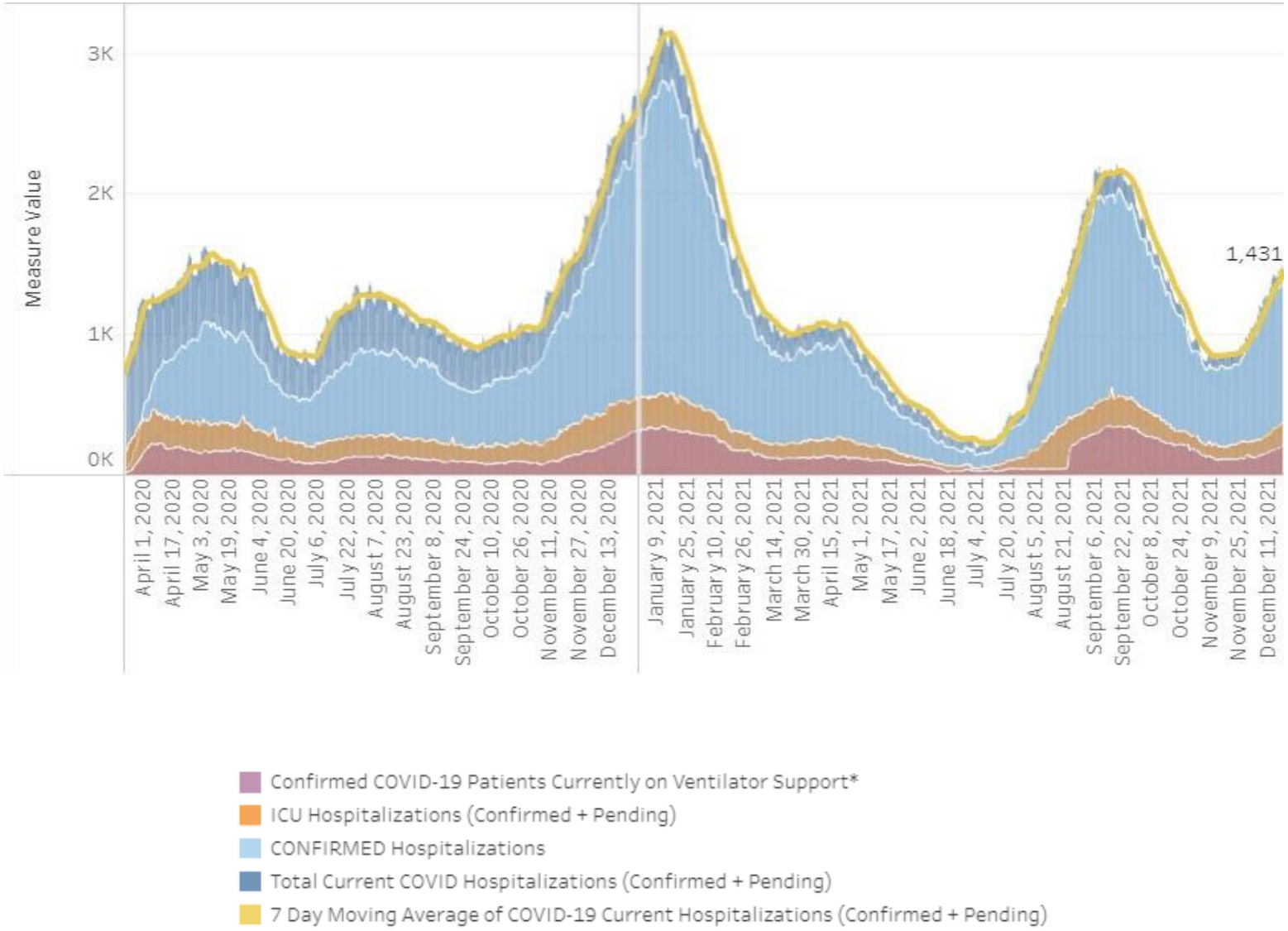


Source: Cases – Coronavirus (virginia.gov), Cases and Deaths - Coronavirus (virginia.gov), VHHA Hospitalizations – Coronavirus (virginia.gov), Data represent a 7-day moving average

Virginia Hospitalization Trends

Updated 12/21

COVID-19 in Virginia Hospitals



Compared to last week hospitalizations **increased to 1,431** (7-day MA) from 1,259 (+13.7%)

- 34% lower than the September high of 2021

Compared to last week. ICU hospitalizations have **increased to 378** from 301 (+26%)

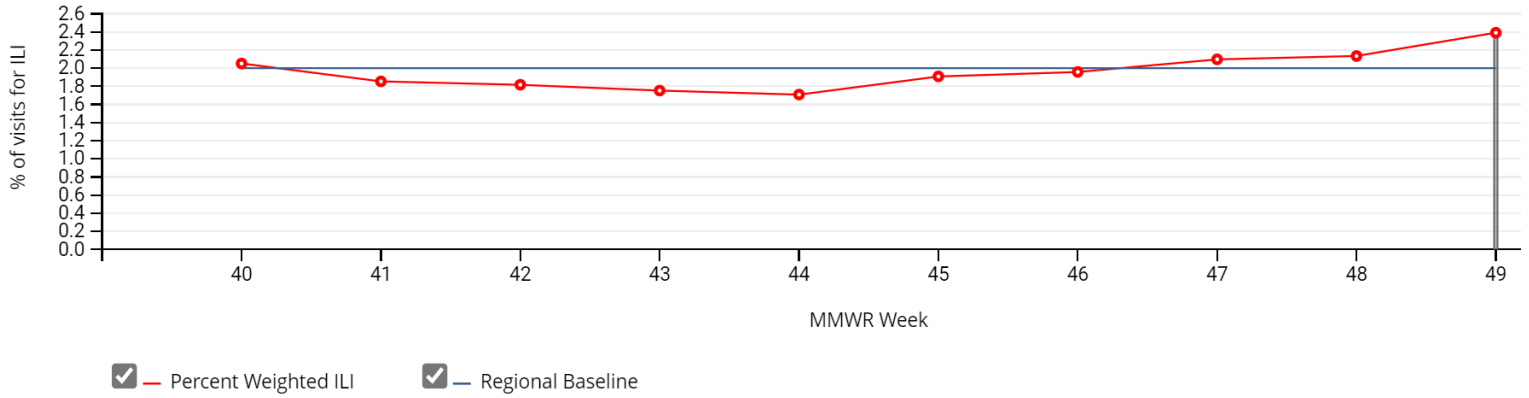
213 patients are currently on ventilator support

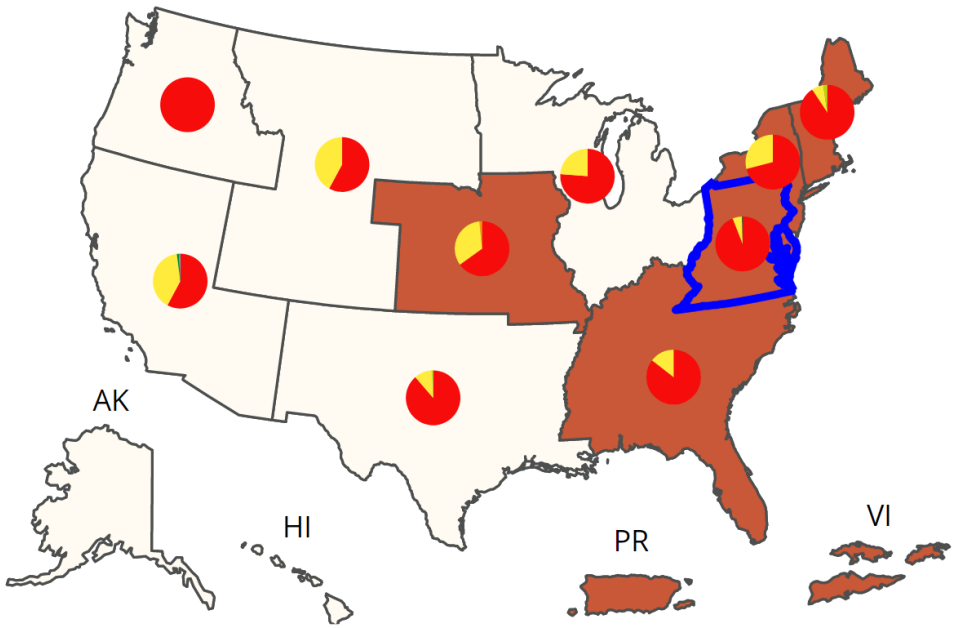
- 39% lower than the September high of 2021
- 17% lower than the December 21st, 2020, Hospitalization Rate

Influenza Like Illness (ILI) Trends in the Commonwealth

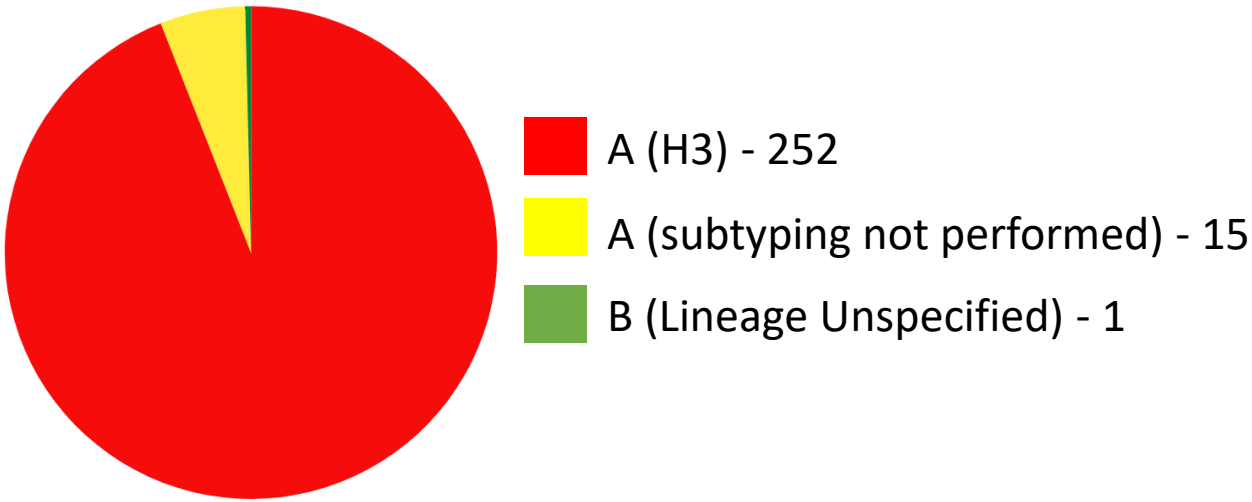
Updated 12/21

Region 3 Percentage of Visits for ILI (ending 12/11)





Region 3 Influenza Positive Tests from most recent 3 weeks (ending 12/11)



Source: National, Regional, and State Level Outpatient Illness and Viral Surveillance (cdc.gov)

COVID-19 Burden in Virginia LTCFs

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

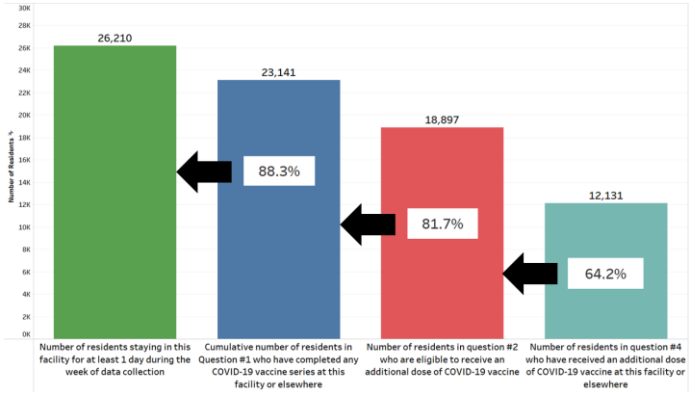
Updated 12/21/2021

Key Trends

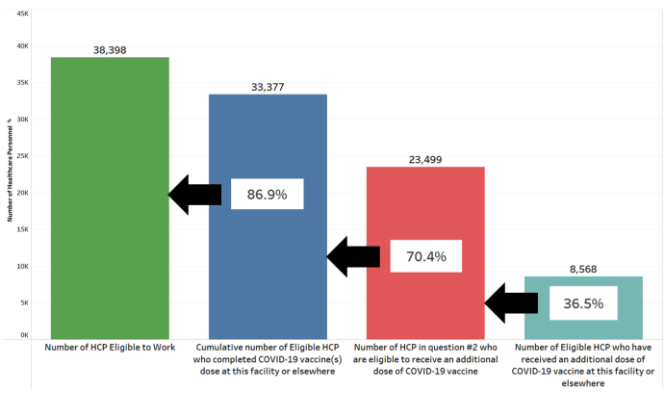
- Outbreaks in LTCFs have accounted for 24% of total COVID-19 outbreaks in Virginia.
  - There were **54 LTCF COVID-19 outbreaks reported in the past 30 days**: 17 in Southwest, 14 in Northwest, 10 in Central, 10 in Eastern, and 3 in Northern *(see figure top right)*.
- The number of reported resident and staff cases have increased in recent weeks *(see figure bottom right)*.
  - For the reporting week ending December 12, 2021, 140 resident and 86 staff cases were reported to NHSN.
- For reporting week ending December 12, 2021, data reported from 284 nursing homes showed **88% of residents were fully vaccinated**; data reported from 284 nursing homes showed **87% of staff were fully vaccinated** *(see figure bottom left)*.
  - Of the 18,897 residents eligible to receive an additional dose or booster, 12,131 (64%) have received an additional dose or booster of COVID-19 vaccine.
  - Of the 23,499 healthcare personnel eligible to receive an additional dose or booster, 8,568 (37%) have received an additional dose or booster of COVID-19 vaccine.
  - Twenty-one (7%) nursing homes reported that **no** eligible residents have received an additional dose or booster of COVID-19 vaccine at the time of reporting.

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

Nursing Home Residents

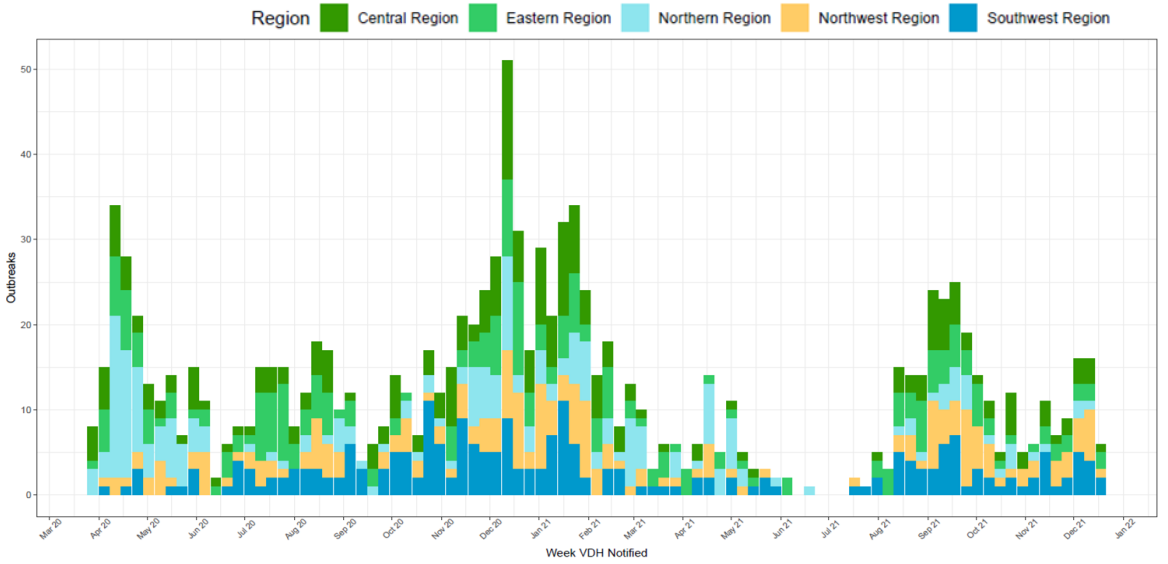


Nursing Home Staff



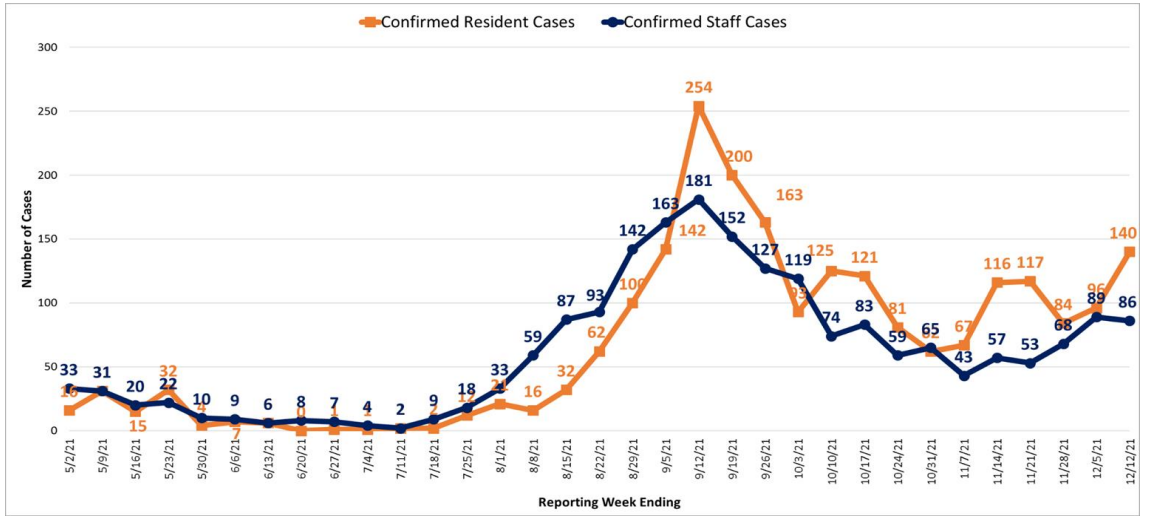
Data are from the National Healthcare Safety Network (NHSN) as of 12/21/2021 and are subject to change, including booster eligibility per updated vaccine guidance. In Virginia, 284 nursing homes reported resident vaccination data for reporting week ending 12/12/2021; 284 nursing homes reported staff vaccination data for reporting week ending 12/12/2021. For staff type definitions, refer to NHSN Table of Instructions.

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



Includes outbreaks reported from nursing homes, assisted living facilities, and multicare facilities to VDH with a confirmed or suspected etiologic agent of SARS-CoV-2; updated 12/20/2021.

Nursing Home Resident and Staff COVID-19 Cases



Data are from NHSN as of 12/21/2021 and are subject to change. For reporting information, please refer to the NHSN data collection forms: residents, staff.

Virginia: Regional Metric Summary

Updated 12/21

Metrics date: 12/19/2021

	Central	Eastern	Far Southwest	Near Southwest	Northern	Northwest
New cases per 100k within the last 7 days	245.6 ↑	182.3 ↑	332.9 ↓	274.6 ↑	264.9 ↑	307.9 ↑
% Positivity 7-day moving average	9.5% ↑	10.1% ↑	12.1% ↓	11.8% ↑	8.0% ↑	11.6% ↓
COVID-like ED visits rate per 100k	26.5 ↑	14.3 ↓	22.0 ↓	22.6 ↑	11.3 ↑	16.9 ↑

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

Please note: the methods used this week have changed slightly; data is now compared from Sunday to Sunday instead of Wednesday to Wednesday

Source: Region Metrics – Coronavirus

*Data represents a 7-day moving average, trends compared to 1 week ago comparing end of week totals from Sunday to Sunday

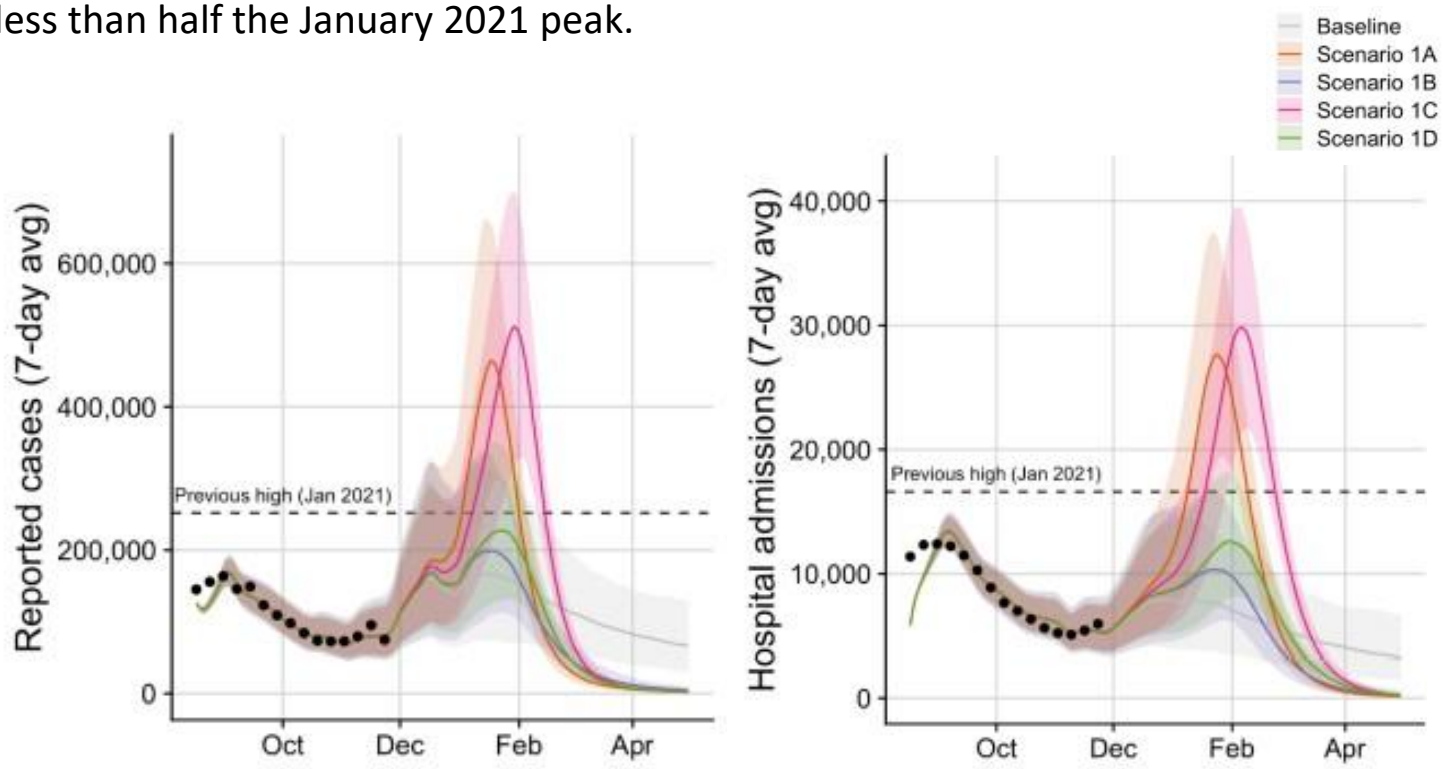
Literature Review: Omicron Variant in the U.S.

COVID-19 Scenario Projections: The Emergence of Omicron in the US: December 16, 2021

Based on emerging Omicron data, University of Texas researchers, in consultation with CDC, developed a model to simulate COVID-19 cases, hospitalizations, and deaths over a 6-month period – the most elucidating findings across all scenarios include:

- Assuming that Omicron is at 0.01% prevalence in the United States as of December 1, all scenarios expect the variant to quickly overtake Delta in the US
- Increasing booster rates from 57% to 80% by March 1 decreases the projected reported cases by 5%, hospitalizations by 12%, and deaths by 13%
- In the most pessimistic scenario, Omicron is expected to overwhelm hospitals and healthcare providers in a wave peaking in early February 2022, resulting in nearly double the hospital admissions of the January 2021 peak. Under the most optimistic scenario, Omicron peaks in mid-January 2022 and hospital admissions are less than half the January 2021 peak.

Omicron scenario	Transmission Characteristics		Severity Characteristics	
	Transmissibility relative to Delta	Immune escape relative to Delta (infections)*	Immune escape relative to Delta (hospitalizations)**	Immune escape relative to Delta (deaths)**
Baseline (no Omicron)	NA	NA	NA	NA
Scenario 1A	155%	42.5%	32%	22%
Scenario 1B	150%	10%	22%	12%
Scenario 1C	100%	85%	32%	22%
Scenario 1D	80%	50%	22%	12%



Literature Review: Omicron Variant

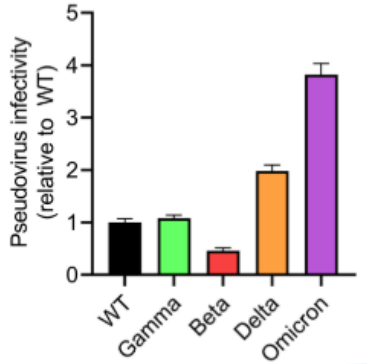
Updated 12/20

mRNA-based COVID-19 vaccine boosters induce neutralizing immunity against SARS-CoV-2 Omicron variant

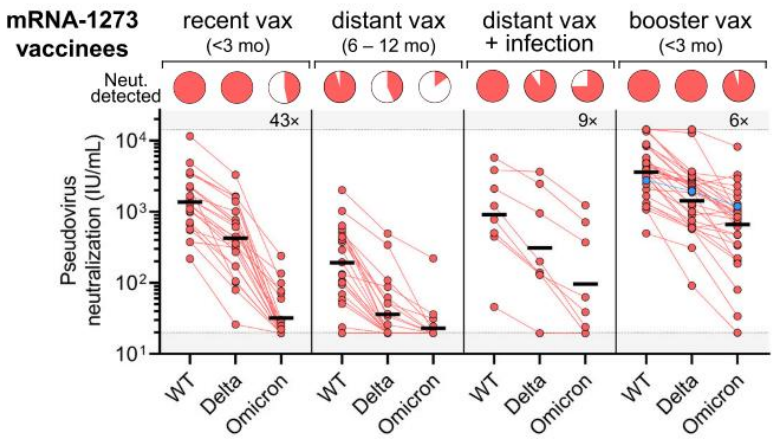
A cohort study of 239 COVID-19 vaccinees to measure neutralization potency of sera amongst recently vaccinated (<3 months), distantly vaccinated (6-12 months), and recently boosted individuals against Omicron. Findings suggest that:

- Receiving a third dose (booster) of an mRNA based vaccine induces higher neutralization titers against all SARS-CoV-2 types, increasing the breadth of humoral immunity and cross reactivity against Omicron
- Recent boosting in infection-naïve individuals yielded the highest neutralization activity to Omicron compared to those recently vaccinated (<3 months) and distantly vaccinated (6-12 months)
- When interpreting Omicron's ability to use ACE2 protein and infect ACE2 cells, Omicron was found to be **4-fold more infectious than wild type and 2-fold more infectious than Delta variant**

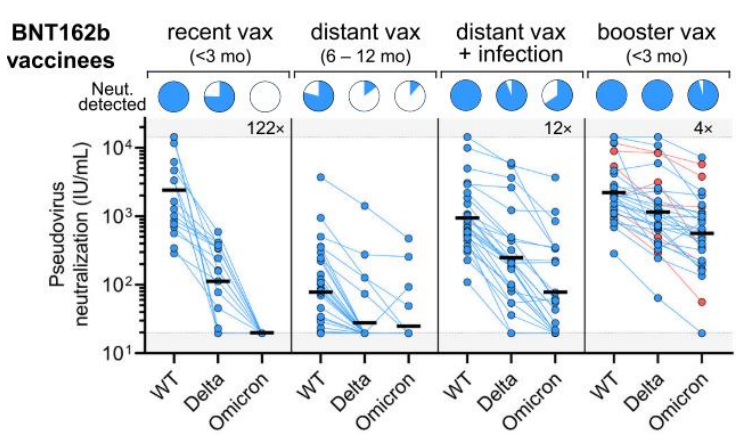
Omicron 4x more infectious than Wild Type



Moderna Vaccinees



Pfizer Vaccinees



J&J Vaccinees