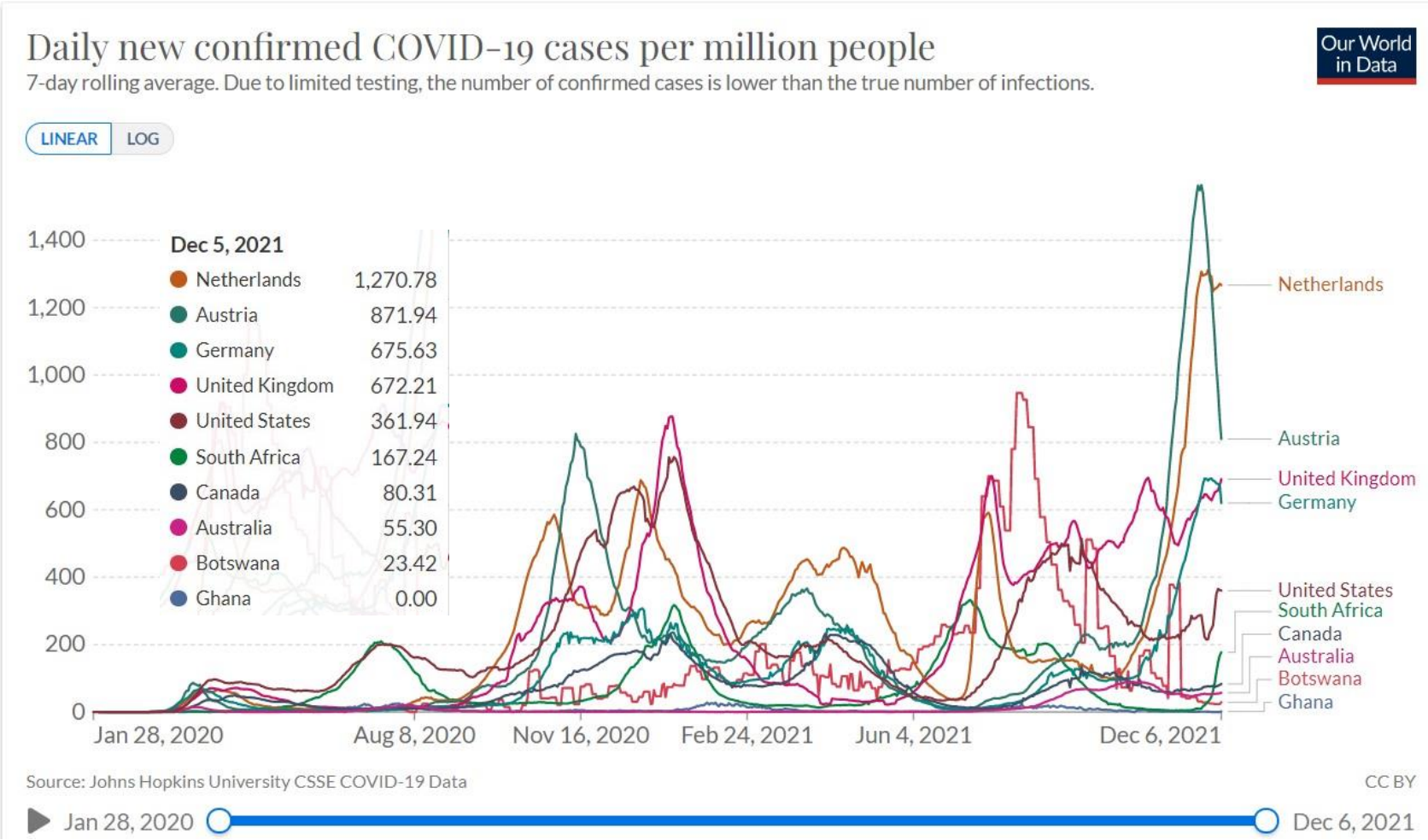
Virginia
COVID-19 Surveillance Data Update

December 8, 2021

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

World: Cases of Omicron by Country

Updated 12/7



VOC Omicron GR/484A B.1.1.529

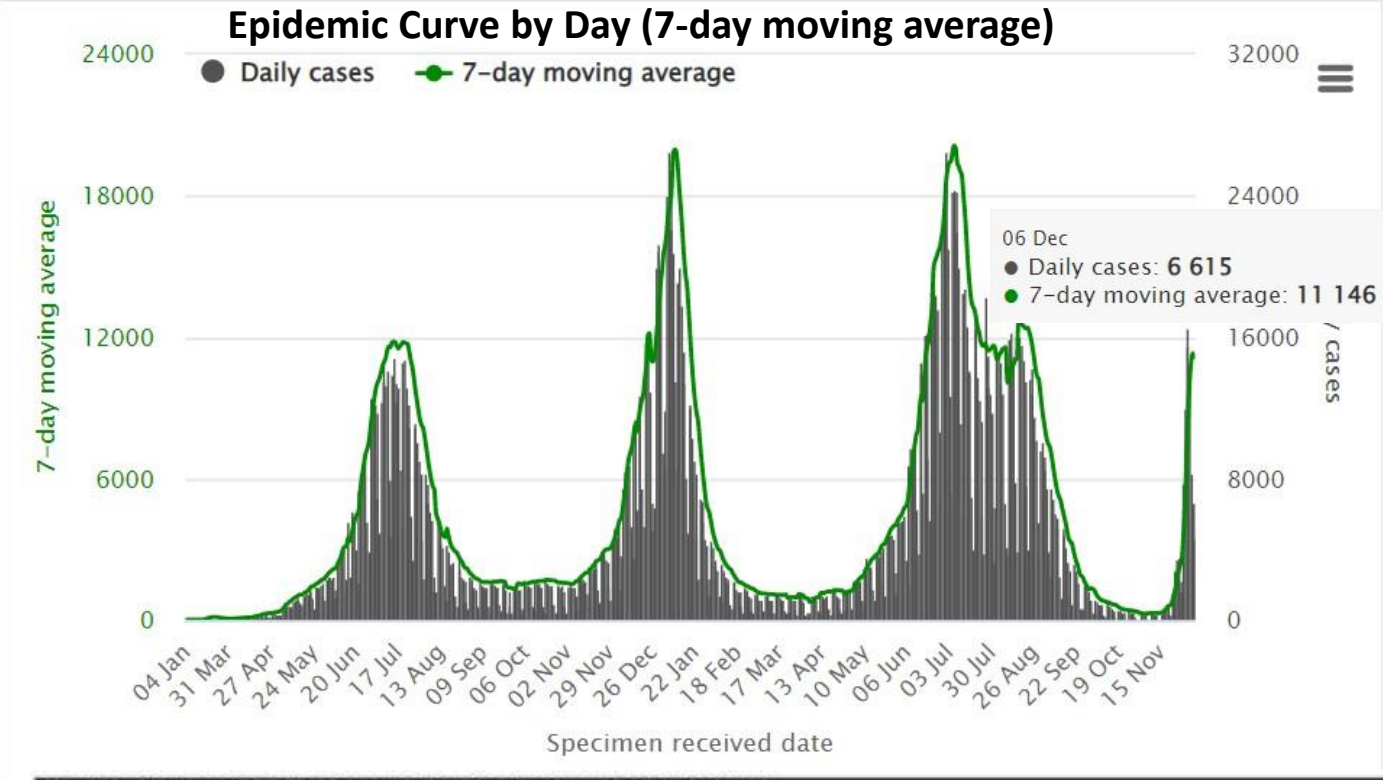
Country Submission Count

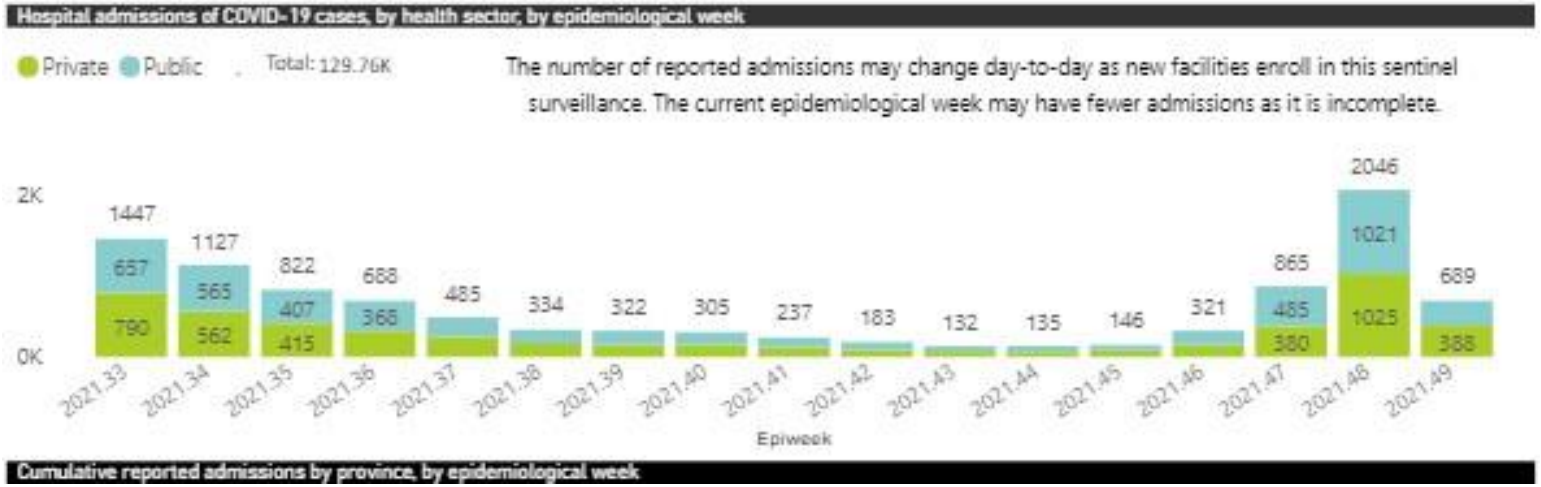
Country	Total #GR/484A (B.1.1.529)	#GR/484A (B.1.1.529) in past 4 weeks	%GR/484A (B.1.1.529) in past 4 weeks
South Africa	255	251	81.5
United Kingdom	238	238	0.2
USA	35	35	0.1
Ghana	33	33	63.5
Netherlands	24	24	2.1
Canada	23	13	0.8
Botswana	23	23	19.5
Australia	22	22	1.1
Austria	15	11	5.4
Germany	15	15	0.1

Sources: GISAID - hCov19 Variants Coronavirus (COVID-19) Cases - Statistics and Research - Our World in Data

Omicron in South Africa Update

Updated 12/8





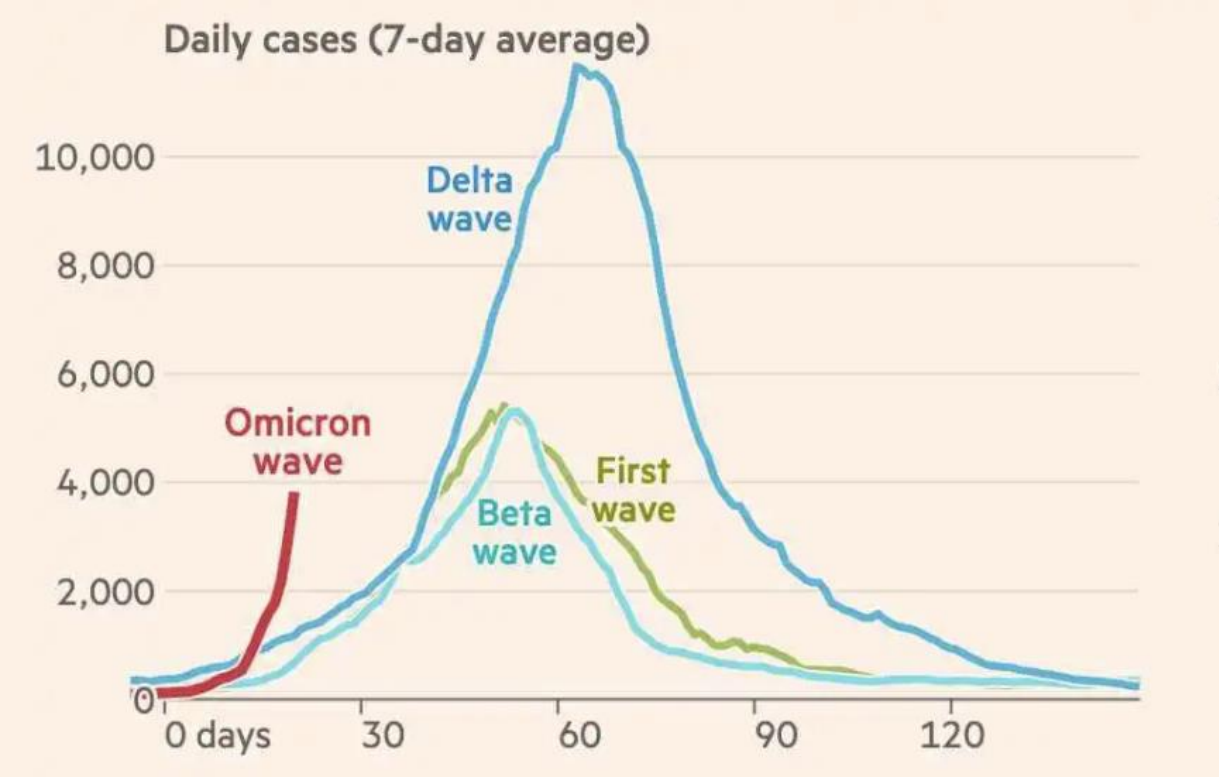
- In South Africa, **cases** since last week **increased** to 11,146 (7-day MA) per day (+68.6%)
- **Approximately 25% of South African population is fully vaccinated compared to 60% of US population**
- South Africa has not rolled out booster shots beyond healthcare workers
- Median age is 26.4 years
  - 57% of population over 50 years old vaccinated
  - 34% of population 18-49 years old vaccinated
- In Gauteng Province, the epicenter for Omicron, hospitalizations for COVID-19 are increasing rapidly

Sources: National Institute for Communicable Diseases South Africa - average age of the population 2015 | Statista Coronavirus (COVID-19) Vaccinations - Statistics and Research - Our World in Data

Cases and Hospitalizations in Gauteng Province, South Africa

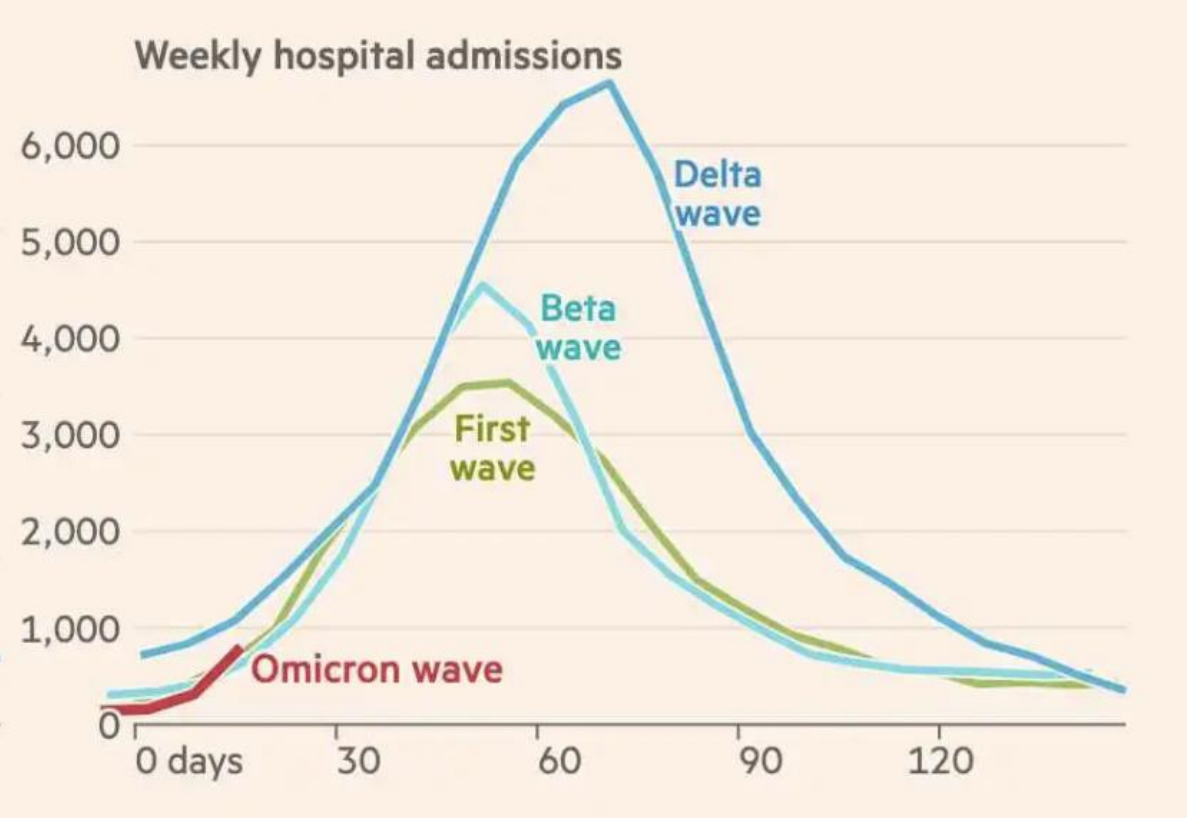
Updated 12/2

Cases by number of days



*Start of wave defined as when 7-day average of cases rose for 7 successive days

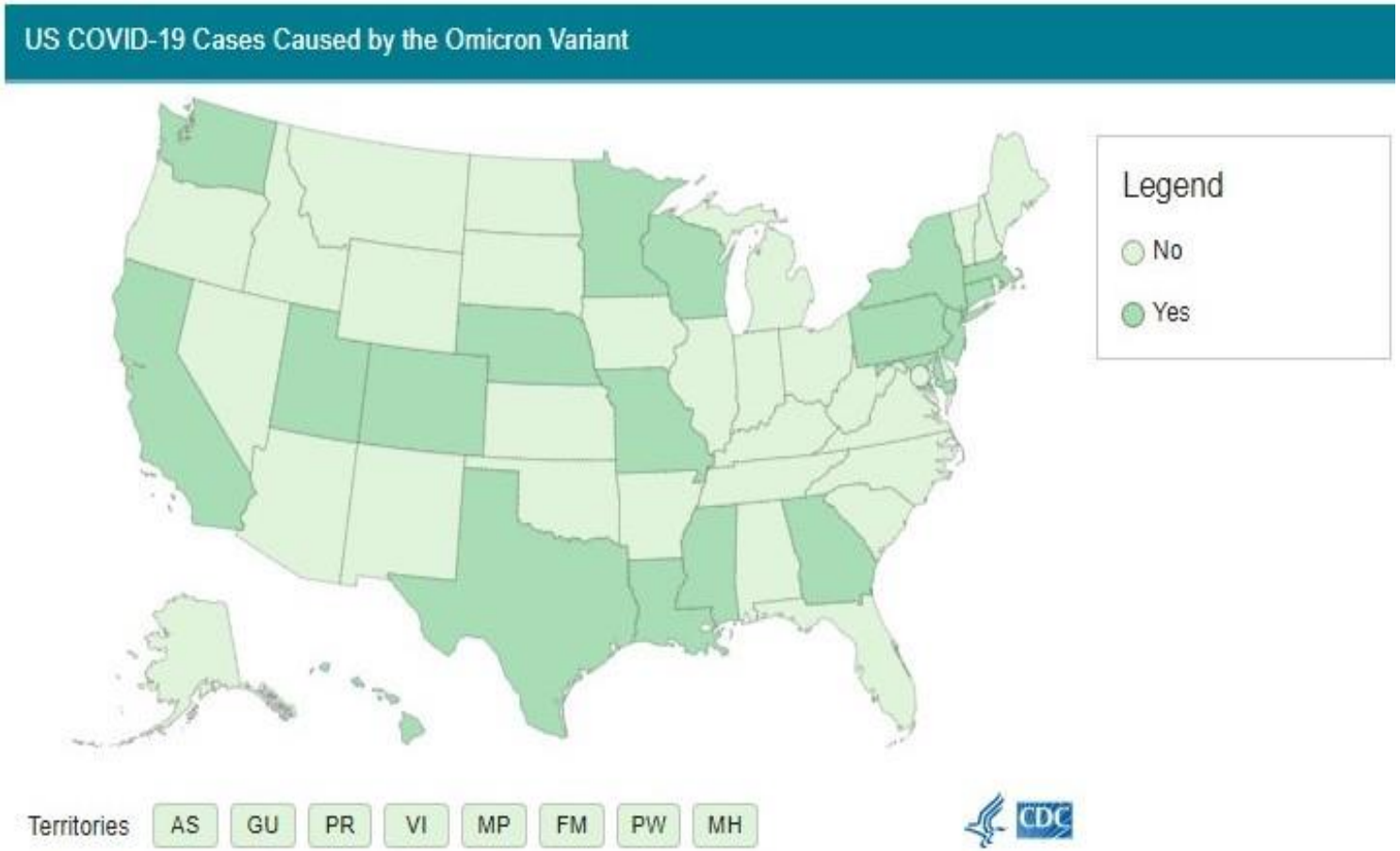
Hospital Admissions by number of days



Source: Financial Times analysis of data from South Africa's National Institute for Communicable Diseases

Tracking Omicron in the U.S.

Updated 12/8



The Omicron variant has been detected in **19** US states

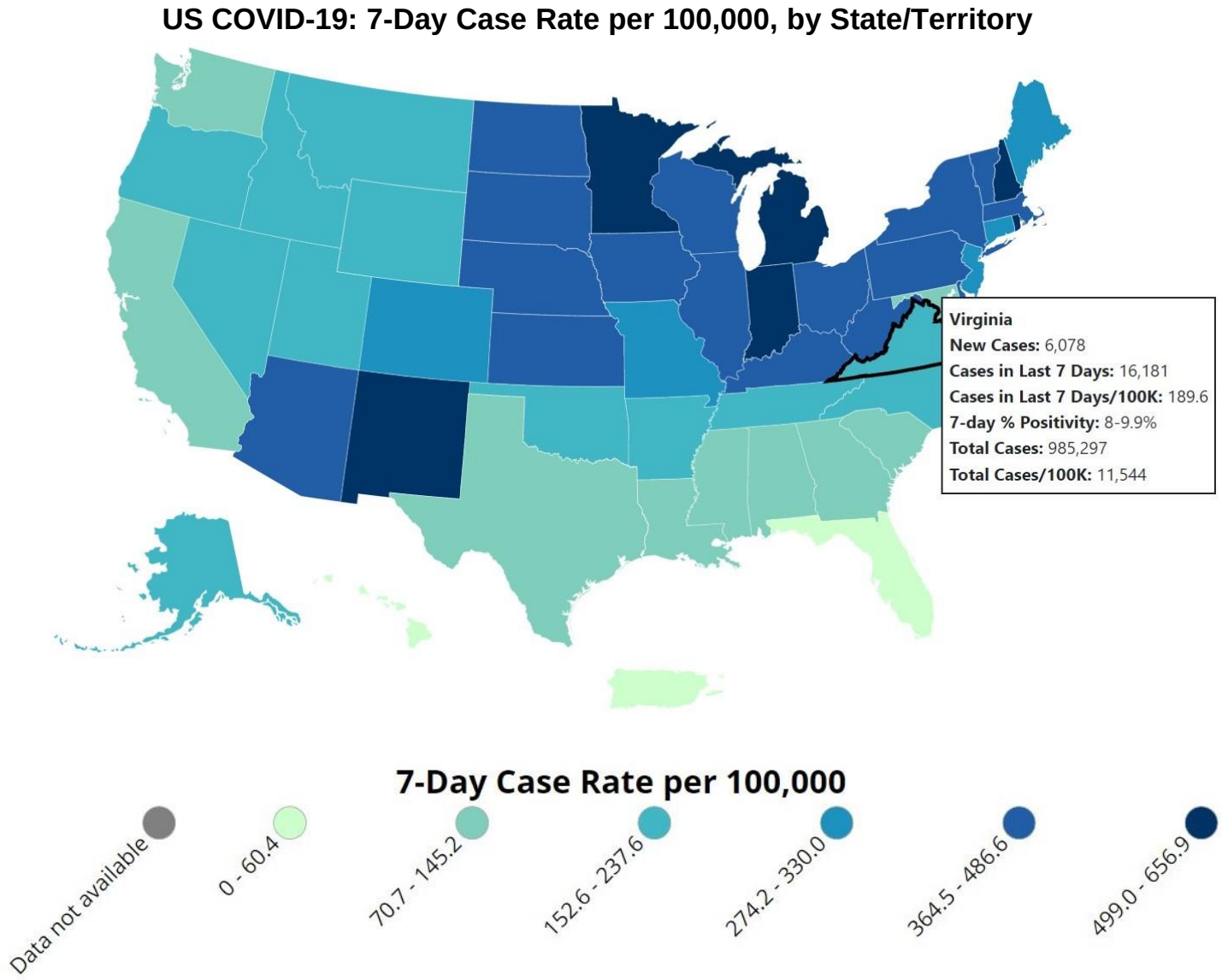
Emerging Omicron Concerns:

- **Vaccine Effectiveness:** Early indication vaccine can prevent severe cases and protect against hospitalization and death
- **Disease Severity:** Small observed case load shows variant may have no unusual symptoms and be less virulent
- **Transmissibility:** Omicrons rapid increase of cases in South Africa in tandem with complex spike protein indicate a higher likelihood of increased transmissibility
- **Monoclonal Antibody:** Ongoing research needed to measure mAb treatment effectiveness
- **Diagnostics:** CDC monitoring testing equipment; PCR kit utilizing SGTF is early frontrunner to consistently identify Omicron

Source: Science Brief: Omicron (B.1.1.529) Variant | CDC

National: Weekly COVID-19 Case Rate

Updated 12/8



	Cases in the Last 7 Days Per 100k Population
Virginia	189.6 (+40.4%)
U.S.	247.1 (+35.8%)
New Hampshire	656.9 (+30.1%)
Michigan	601.7 (+25.9%)
Minnesota	590.2 (+33.8%)

Our Neighbors

Rates Higher than Virginia

West Virginia, **409.3** (+45.7%)
Kentucky, **364.5** (+43.5%)
Tennessee, **195.2** (+53.7%)

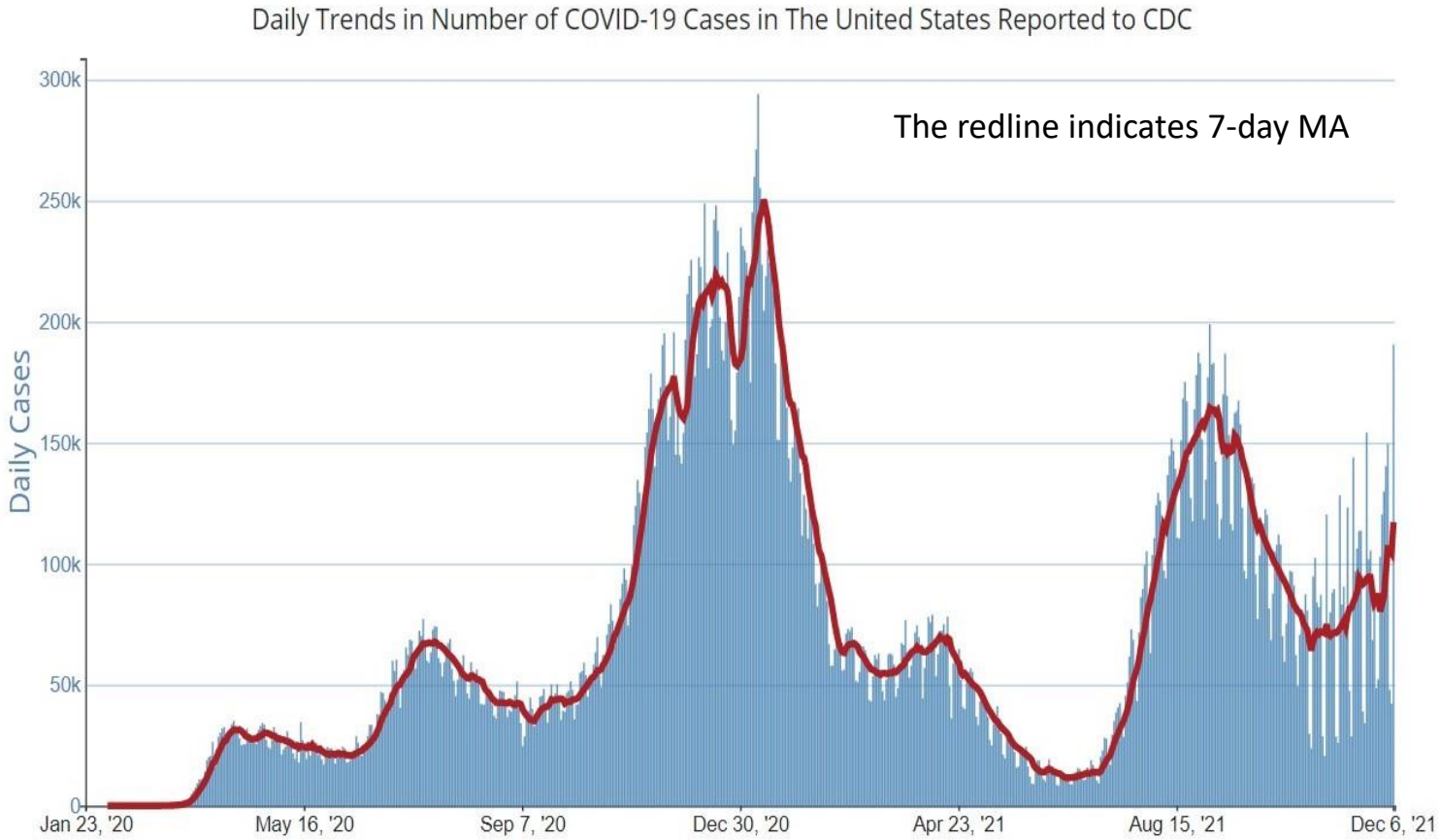
Rates Lower than Virginia:

North Carolina, **185.9** (+70.6%)
District of Columbia, **161.7** (+112.4%)
Maryland, **108.1** (-12.8%)

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

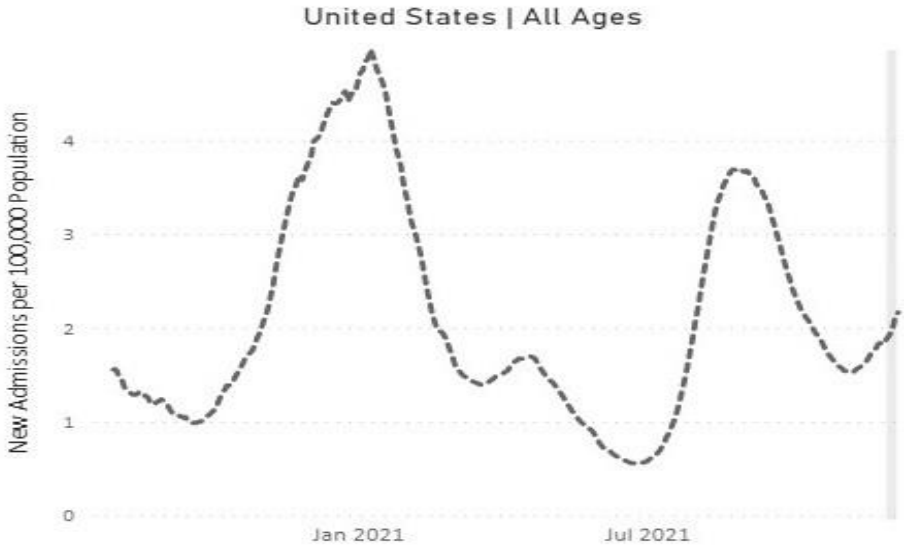
National: Cases, Hospitalizations, and Deaths

Updated 12/8



- Compared to last week, **cases** increased to 117,179 (7-day MA) per day (+45.9%)
  - 53% lower than the January peak of 2021
  - 1229% higher than the June low of 2021
  - 29% lower than the September high of 2021
- **Hospitalizations** increased to 7,176 (7-day MA) per day (+14.6%)
- **Deaths** increased to 1,117 per day (+38.4%)

Hospitalization Trends

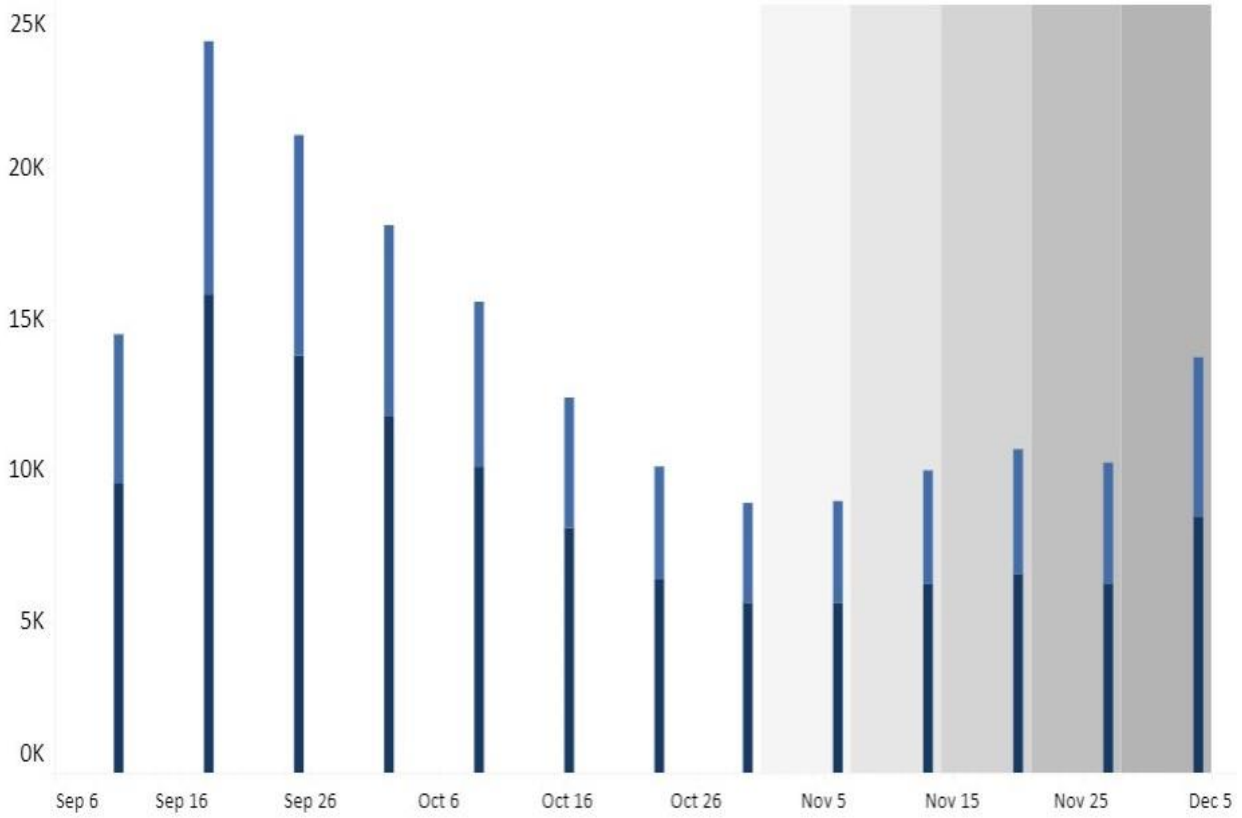


Source: CDC COVID Data Tracker

Virginia: Cases, Hospitalizations, and Deaths

Updated 12/8

Cases by Date of Symptom Onset, Past 13 weeks



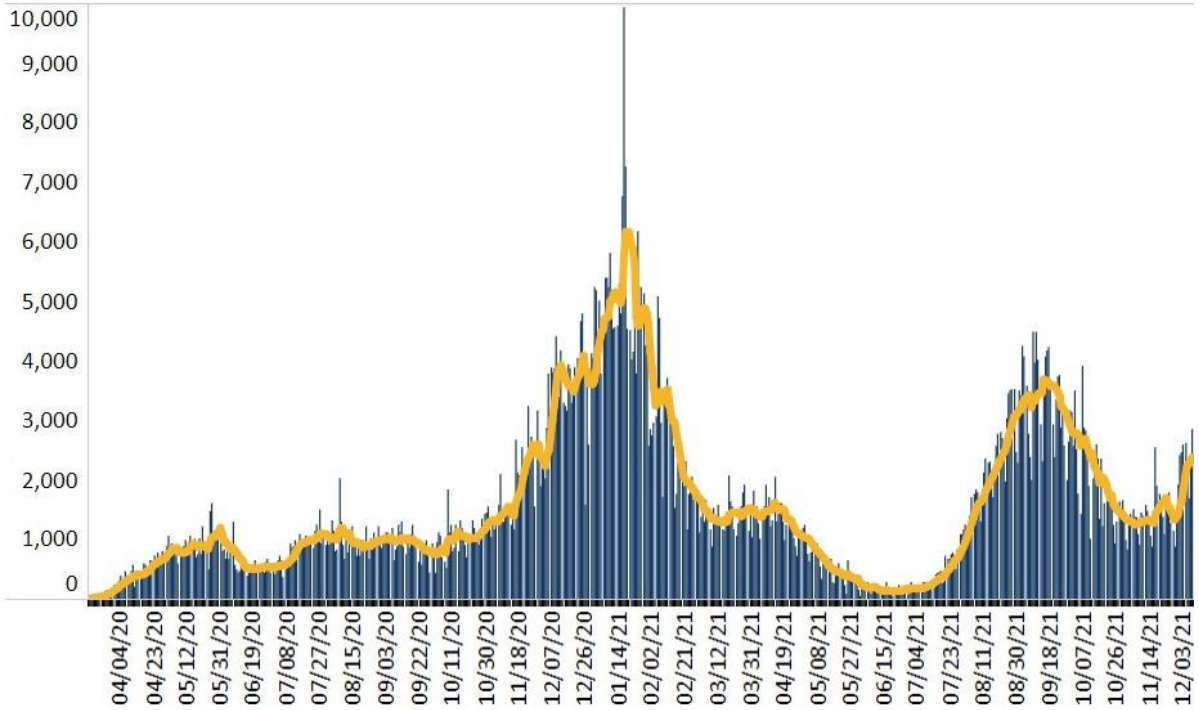
Gray shaded area illness may not have been reported yet

Compared to last week, **cases increased** to 2,374 (7-day MA) from 1,548 per day (+53%)

- 61% lower than the January peak of 2021
- 1740% higher than the June low of 2021
- 36% lower than the September high of 2021

- **Hospitalizations** increased to 1,085 per day (+18%)
- **Deaths** decreased to 15.4 per day (-23%)

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: Regional Metric Summary

Updated 12/8

Metrics date: 12/8/2021

	Central	Eastern	Far Southwest	Near Southwest	Northern	Northwest
New cases per 100k within the last 7 days	180.8 ↑	144.5 ↑	389.7 ↑	261.3 ↑	150.1 ↑	262.6 ↑
% Positivity 7-day moving average	7.1% ↓	8.4% ○	13.7% ↓	10.8% ↓	5.1% ↑	11.1% ↑
COVID-like ED visits rate per 100k	17.5 ↓	11.3 ↓	17.1 ↓	17.4 ↓	7.3 ○	12.0 ↓

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

COVID-19 Burden in Virginia LTCFs

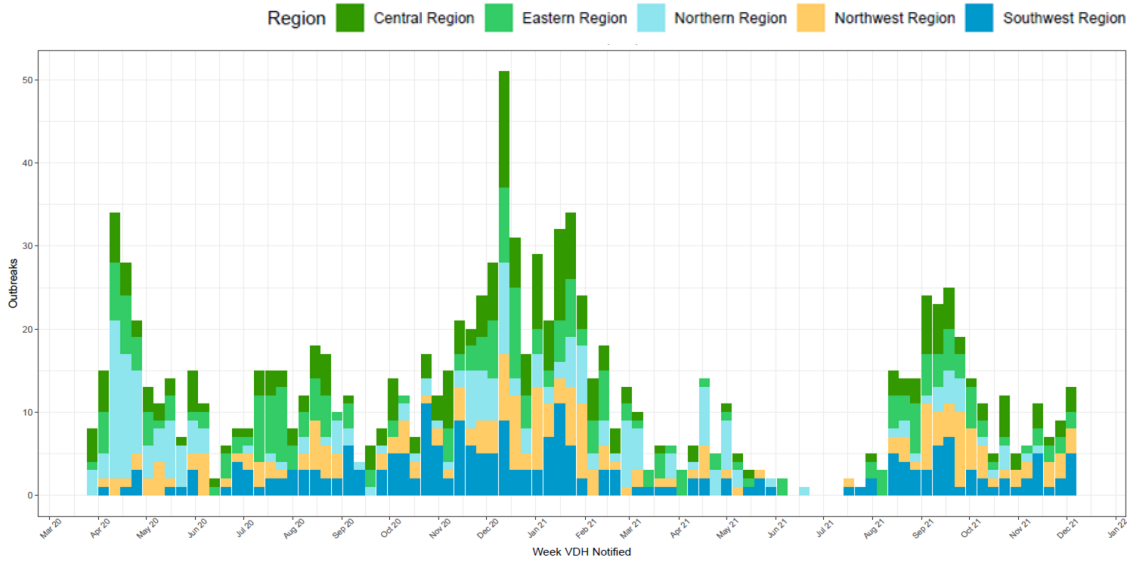
Questions can be directed to: hai@vdh.virginia.gov

Updated 12/7/2021

Key Trends

- **Outbreaks in LTCFs have accounted for 24% of total COVID-19 outbreaks in Virginia.**
  - There were **46 LTCF COVID-19 outbreaks reported in the past 30 days**: 15 in Southwest, 11 in Northwest, 9 in Central, 9 in Eastern, and 2 in Northern *(see figure top right)*.
- The number of reported staff cases have increased in recent weeks *(figure bottom right)*.
  - For the reporting week ending November 28, 2021, 84 resident and 68 staff cases were reported to NHSN.
- For reporting week ending November 28, 2021, data reported from 277 nursing homes showed **88% of residents were fully vaccinated**; data reported from 281 nursing homes showed **84% of staff were fully vaccinated** (*see figure bottom left*).
  - Of the 17,158 **residents** eligible to receive an additional dose or booster, 10,666 **(62%) have received an additional dose or booster of COVID-19 vaccine.**
  - Of the 20,622 **healthcare personnel** eligible to receive an additional dose or booster, 7,243 **(35%)** have received an additional dose or booster of COVID-19 vaccine.
  - Thirty-six (13%) nursing homes reported that **no** eligible residents have received an additional dose or booster of COVID-19 vaccine at the time of reporting.

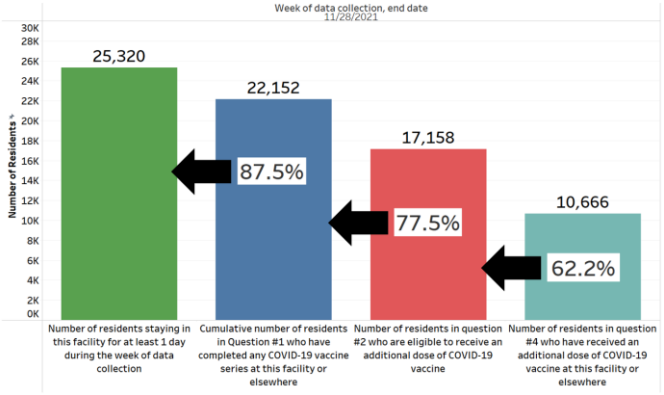
Number and Region of LTCF COVID-19 Outbreaks by Date VDH Notified



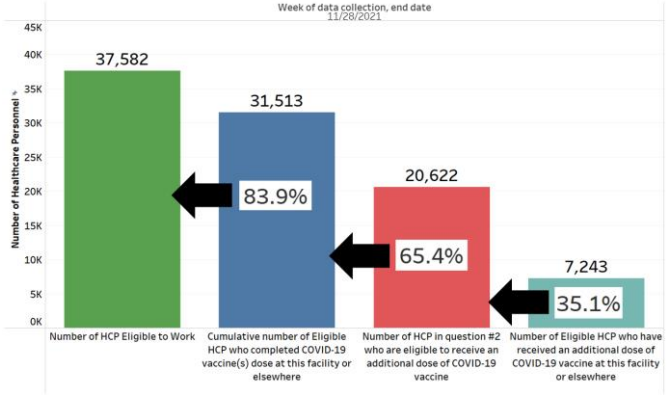
Includes outbreaks reported from nursing homes, assisted living facilities, and multicare facilities to VDH with a confirmed or suspected etiologic agent of SARS-CoV-2; updated 12/6/2021.

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

Nursing Home Residents

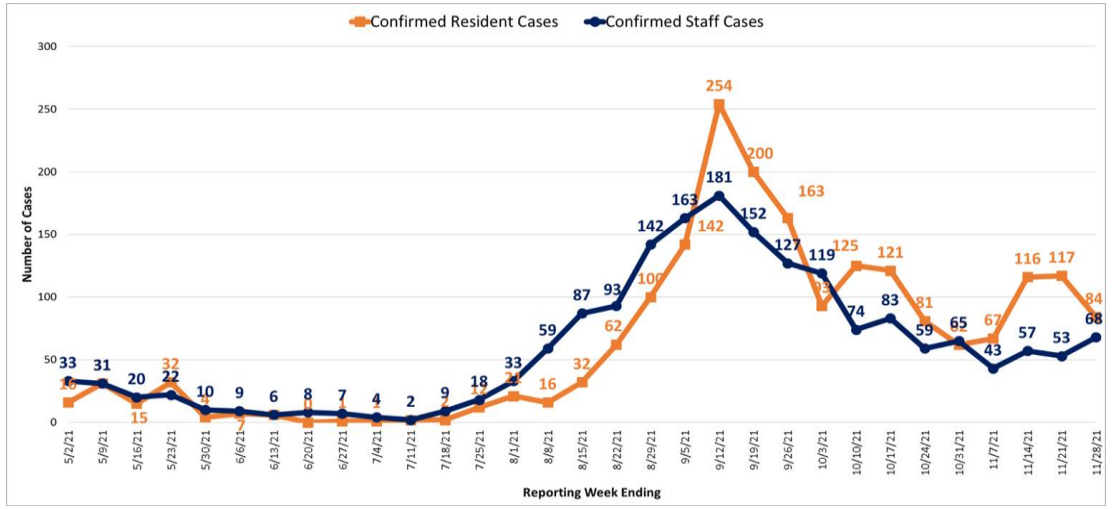


Nursing Home Staff



Data are from the National Healthcare Safety Network (NHSN) as of 12/6/2021 and are subject to change, including booster eligibility per updated vaccine guidance. In Virginia, 277 nursing homes reported resident vaccination data for reporting week ending 11/28/2021; 281 nursing homes reported staff vaccination data for reporting week ending 11/28/2021. For staff type definitions, refer to NHSN Table of Instructions.

Nursing Home Resident and Staff COVID-19 Cases



Data are from NHSN as of 12/6/2021 and are subject to change. For the reporting week ending 10/17/2021, a reporting error was identified and removed from the total resident case count.
For reporting information, please refer to the NHSN data collection forms: residents, staff.

Literature Review: COVID-19 Omicron Variant

Updated 12/7

Omicron SARS-CoV-2 variant: a new chapter in the COVID-19 Pandemic – The Lancet: December 3, 2021

An initial review of Omicron findings within South Africa and its relation to previous variant waves:

- COVID-19 cases are increasing rapidly in Gauteng, an epicenter of Omicron, with the **doubling time** in their fourth wave higher than that of their previous three waves
- The immunological characteristics of Omicron's deletions and mutations overlap with previous variants of concern and **suggest increased transmissibility, higher viral binding affinity, and higher antibody escape** may be a concern
- Preliminary evidence suggests that PCR diagnostics, previously used with the Alpha variant, can effectively detect Omicron variants in South Africa
- Immune escape is a possible concern as early PCR tests suggests an **increase in cases of reinfection** within South Africa

Increased risk of SARS-COV-2 reinfection with the emergence of the Omicron variant in South Africa: Dec 1, 2021

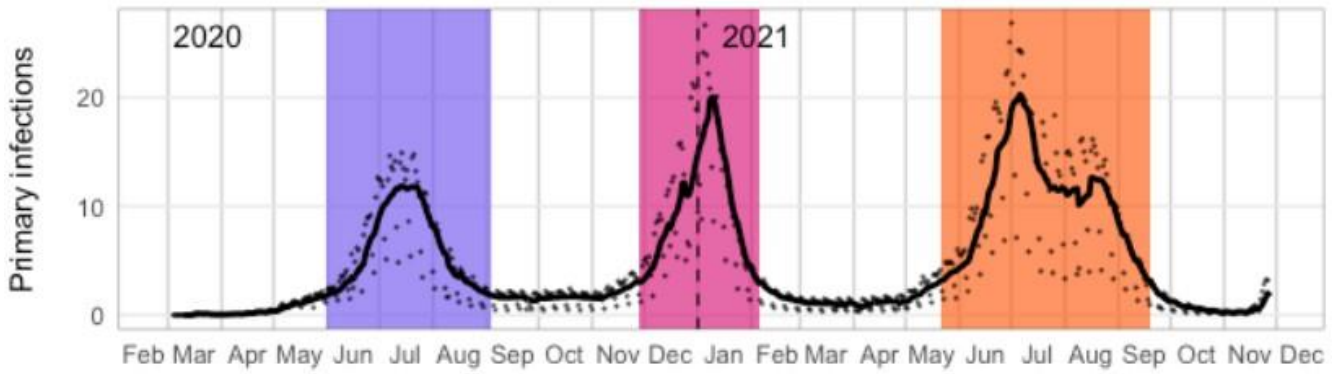
A South African Study evaluated COVID-19 surveillance data collected from 04/2020-11/27/2021:

- 2,796,982 COVID-19 cases were identified with 35,670 cases of reinfection over the 3 COVID-19 waves
- The reinfection hazard ratio identified from **the wild type to the Beta and Delta variants decreased (HR=0.75),** however an **increased risk for reinfection** was found with the **Omicron variant (HR=2.39)**
- Omicron **appears to be more able to evade natural infection induced immunity**, but it is unknown whether it can evade vaccine induced immunity
- Omicron's novel 26-32 mutations in the spike protein are known or predicted to contribute to immune escape and can be antigenically distinct

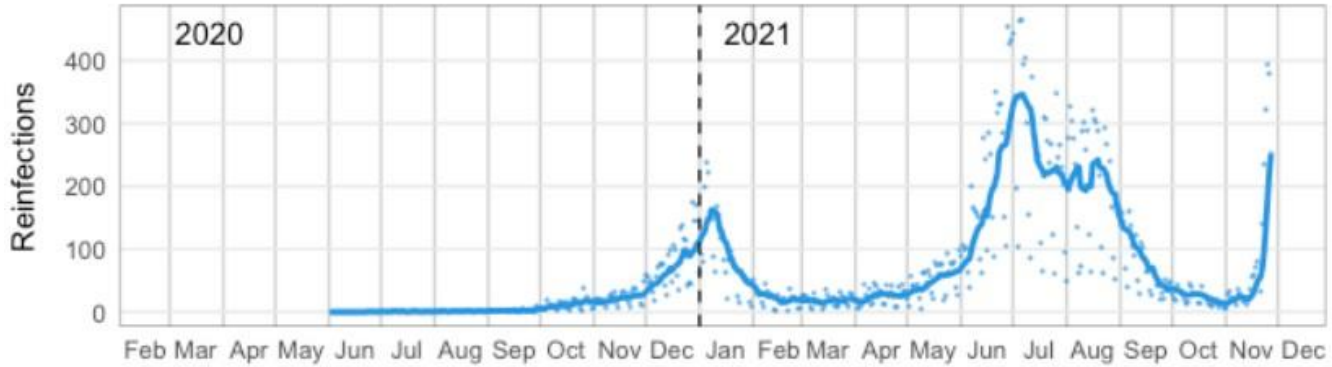
Literature Review: Additional Analyses from Reinfection paper

Updated 12/7

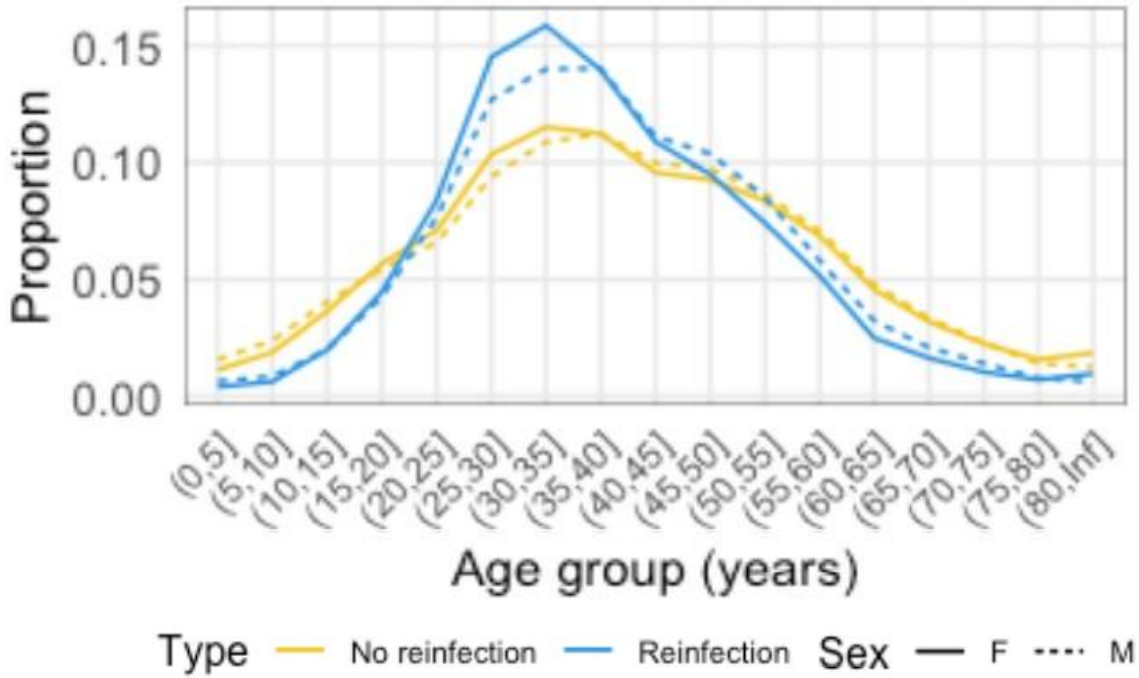
Daily Numbers of Detected Primary Infections



Time Series of Suspected Reinfection



Suspected Reinfections by Sex and Age group



Reinfections were concentrated in adults between the ages of 20 and 55 years

Source: Increased risk of SARS-CoV-2 reinfection associated with emergence of the Omicron variant in South Africa (medrxiv.org)