CONFORMED COPY
2022-00420 MISCELLANEOUS
01/05/2022 09:12:06 AM Pages: 25 Fees: $15.00
Requested By:CITY OF SAN LUIS
Recorded By: arios
Robyn Stallworth Pouquette County Recorder, YUMA County AZ

WHEN RECORDED MAIL TO:

CITY OF SAN LUIS
ATTN: CITY CLERK
P.O. BOX 1170
SAN LUIS, ARIZONA 85349

The above area is to be reserved for recording information

****

CAPTION HEADING:

PROCLAMATION

Proclamation and Continued Declaration of Emergency by Mayor Gerardo Sanchez of the City of San Luis, Arizona, January 4, 2022;
COVID-19 (D Variant and Omicron Variant) - Employees to wear face coverings as informed by latest public health recommendations.

Proclamation

OFFICE OF THE
MAYOR
CITY OF SAN LUIS

PROCLAMATION AND CONTINUED DECLARATION OF EMERGENCY
BY
MAYOR GERARDO SANCHEZ OF THE CITY OF SAN LUIS, ARIZONA
January 4, 2022
COVID-19 (D Variant and Omicron Variant)

Employees to Wear Face Coverings
as Informed by Latest Public Health Recommendations

WHEREAS, on March 13, 2020, by the Mayor's emergency proclamation and City Council Order No. 2020-6, a state of emergency was declared and ordered due to the COVID-19 pandemic and continues in effect; and

WHEREAS, to date, the City of San Luis has facilitated 15 COVID-19 vaccination clinics within the City of San Luis for the public, and employees have all had the opportunity to be fully vaccinated plus a booster; and

WHEREAS, in October, the unvaccinated Arizona population had a 3.9 times risk of testing positive for COVID-19 and 15.2 times risk of dying from COVID-19 than those vaccinated against the disease; and

WHEREAS, Face Coverings work to prevent COVID-19 infections as demonstrated in this one-minute video of a Mayo Clinic study:
https://www.youtube.com/watch?v=9fca7M5STEA&t=59s; and

WHEREAS, the Yuma County Public Health Services District reported the following number of new COVID-19 cases:

December 31, 2021 – 118 new cases
January 1, 2022 – 266 new cases
January 2, 2022 – 0 new cases
January 3, 2022 – 404 new cases

If the average weekly cases climb to the 400 range, cases will be near the all-time peak of cases in Yuma County in January of 2021; and

WHEREAS, health officials first detected the COVID-19 Omicron variant in Arizona on December 8, 2022; and the United Kingdom's Health Security Agency has reported that one infected person can infect an average of 3.7 people, much higher than the average 2 at the height of the surges in cases in January and July of 2021 in Yuma County; and

Legal Authority

WHEREAS, the City of San Luis is within its powers to take the least restrictive measures to protect the health, safety, and welfare of and reduce the harm to the city's employees, the residents, and visitors within its city limits from the spread of COVID-19 and other diseases, specifically its public health, safety and welfare powers (also known as police powers) as a political subdivision of the State of Arizona, as the Tenth Amendment of the Constitution of the United States reserves those powers to the states under; and

WHEREAS, A.R.S. § 9-240(B) (20) and (22) give the city the power to take any action and prescribe regulations regarding disease; and

WHEREAS, A.R.S. § 26-311; San Luis City Code § 2.05.040 "Powers and Duties of the Mayor," San Luis City Code § 2.05.020 "Vice Mayor," empower the Mayor of the City of San Luis, or Vice Mayor in the Mayor's absence or disability, to declare a local emergency exists; and

WHEREAS, A.R.S. Title 26, Chapter 2, Article 1, San Luis City Code § 2.05.040(A)(5) and the October 9, 2019, San Luis Emergency Operations Plan, Basic Plan II(E), Page 6, authorize the Mayor to govern by proclamation during an emergency;

NOW, THEREFORE, I, Gerardo Sanchez, Mayor of the City of San Luis, Arizona, by the authority vested in me by law and facts recited above proclaim and order:

1. **Face Coverings**. Effective immediately, employees must wear city-provided face coverings or appropriate respiratory PPE in the workplace. Employees shall wear face coverings or respiratory PPE so they fit snuggly against the face and cover the nose and mouth. Employees shall maintain a 6-foot distance between people as much as possible.

2. **Rescind**. This proclamation rescinds sections 5(c) and (d) of the December 7, 2021, Proclamation, which allowed for voluntary use of Face Coverings in the workplace.

3. **In Effect**. All other provisions of the December 7, 2021, remain in effect, including but not limited to:

    a. **Senior Center Building and Senior Recreational Activities Elsewhere**. The requirement in the December 7, 2021, Proclamation continues that any person entering the Senior Center or engaged in Senior Center recreational activities elsewhere shall wear a face covering. The City will continue to strictly enforce

the policy requiring participants in Senior Services shall be at least 60 years of age or older.

b. **For the Public, for all other city buildings**. Face coverings are voluntary for the public to enter city buildings open to the public, except if there is a contradictory court administrative order for the Municipal Court building. (While an employee is on duty for the city, the employee is not "public" for purposes of this proclamation).

4. **Other Preventive Measures Against COVID-19 Continue**. Other preventive measures continue as required by the city management's COVID-19 policies and protocols.

5. **Reservation of Rights**. Nothing in this proclamation alters the city's rights to implement any and all legal COVID-19 mitigation measures or lift mitigation measures in the future. The city reserves all its rights to do so.

6. **Severability**. If any provision of this proclamation or its application to any person or circumstance is held invalid by any court of competent jurisdiction, this invalidity affects no other provision or application of this Proclamation. Those provisions that remain valid shall be given effect without the invalid provision or application. To achieve this purpose, the provisions of this Proclamation are declared to be severable.

7. **Effect**. This proclamation shall remain in effect until lawfully amended, repealed, terminated, or pre-empted and shall be reconsidered as the COVID-19 risks to public health increase or decrease.

ISSUED by the Mayor of the City of San Luis, Yuma County, Arizona, this 4 day of January 2022 at 1:28 a.m./(p.m.)

Gerardo Sanchez, Mayor

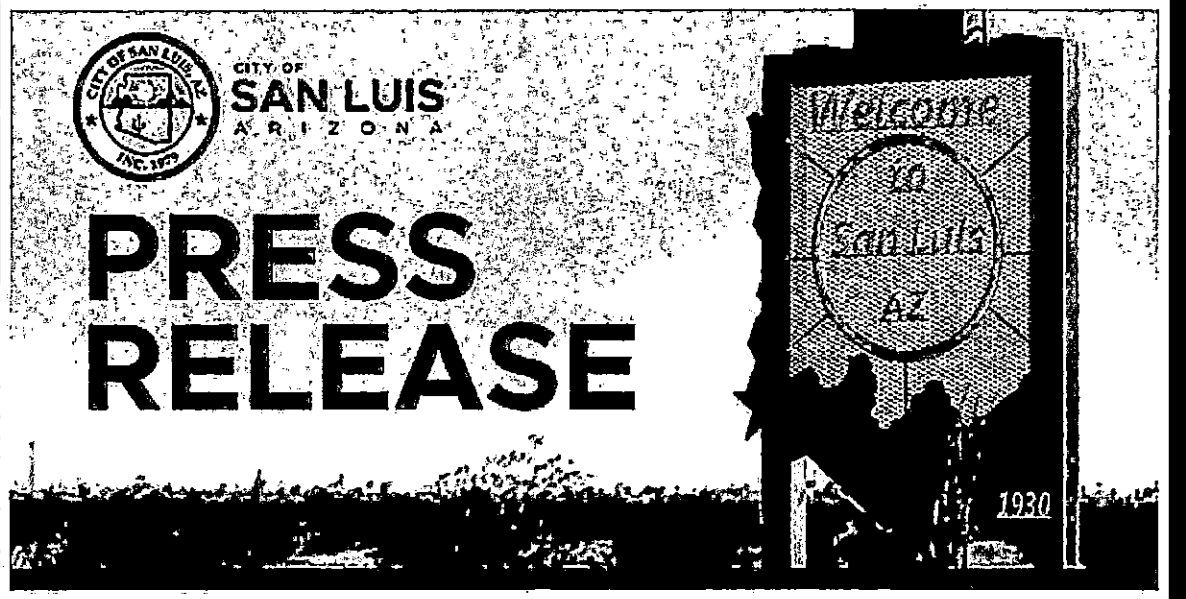
ATTEST:

Sonia Cornelio, City Clerk

APPROVED AS TO FORM

Kay Marion Macuil, City Attorney

Monday, January 3, 2022 6:22 PM



Date: January 03, 2022
Contact: Jose Luis Cisneros
Tel: (928) 341-8520
e-mail: **publicrelations@sanluisaz.gov**

For Immediate Release

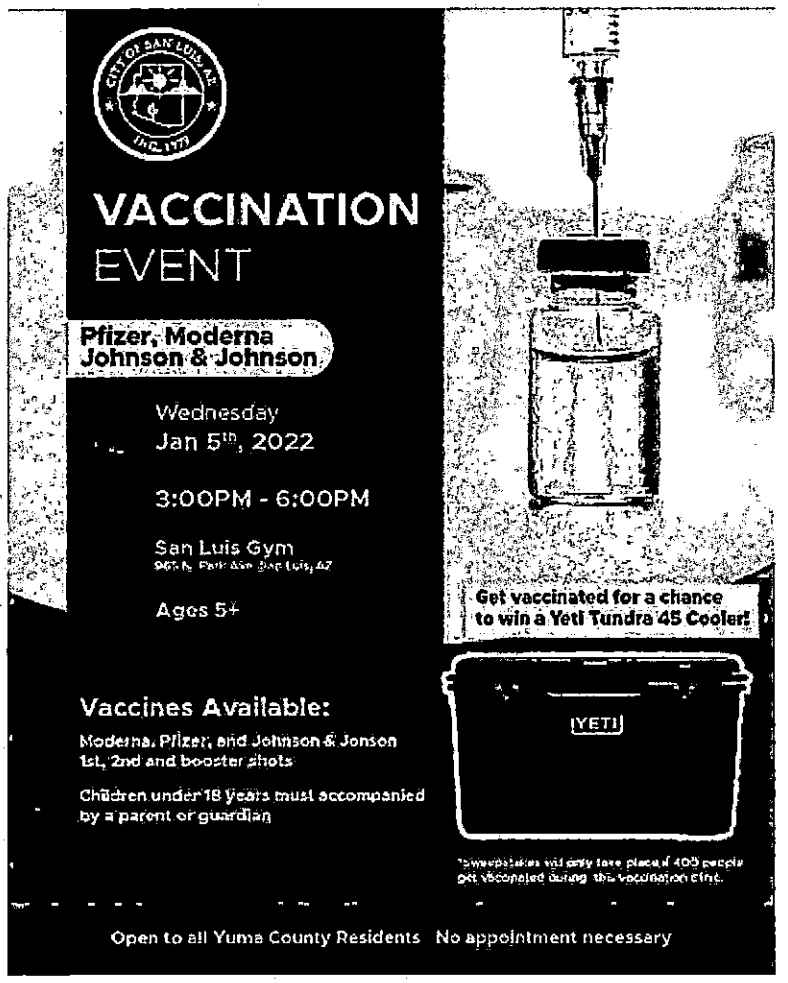
City of San Luis Will Continue Its Vaccination Efforts in 2022

San Luis, Arizona — The City of San Luis, in partnership with the Yuma County Public Health Services District (YCPHSD), will be continuing its COVID-19 vaccination efforts throughout 2022.

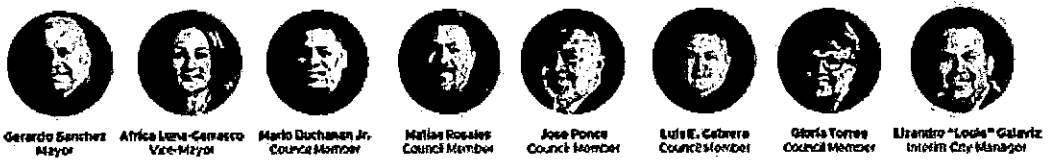
Since the vaccine was made available to the public at the beginning of 2021, the city formed a special partnership with YCPHSD to make the vaccine locally available. Since then, thousands of doses of the COVID-19 vaccine have been administered to San Luis and South Yuma County residents. In order to ensure the health and wellness of residents and to encourage those who have not been vaccinated, the city will continue with these efforts throughout 2022.

"This weekend's 404 positive cases reported by the Yuma County Health Department are a reminder that we must not let our guard down," stated Mayor Gerardo Sanchez. "Providing the vaccine locally will help combat the spread of COVID-19 and the Omicron variant in our community. We are committed to ensuring the health and wellbeing of our community," he concluded.

The City will begin the new year with its 15th vaccination clinic. On Wednesday, January 5, 2022, from 3:00 p.m. to 6:00 p.m., the City of San Luis and the YCPHSD will be offering first, Second and booster shots of the Pfizer, Moderna, and Johnson & Johnson vaccine to all San Luis and Yuma County residents. The clinic will be held at the San Luis Recreation Gym, located at 965 N. Park Ave., San Luis, AZ 85349.



For more information about this topic, or to schedule a meeting with the City of San Luis Public Affairs Office, please call us (928) 341-8520 or email us at **publicrelations@sanluisaz.gov**



WWW.SANLUISAZ.GOV

You are receiving this message because you are subscribed to Press Releases on www.sanluisaz.gov. To unsubscribe, click the following link:
Unsubscribe

ADHS PREPAREDNESS

ARIZONA – Rates of COVID-19 by Vaccination Status 12/22/2021

Summary

In October, unvaccinated persons had:

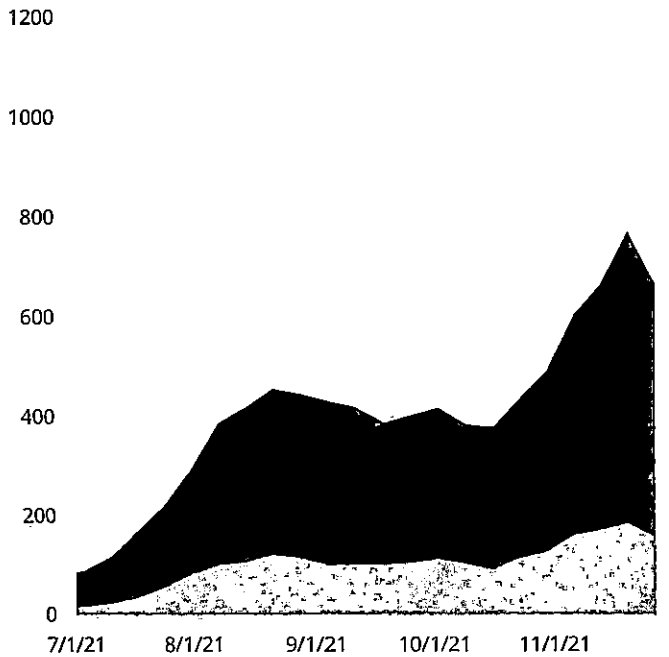
3.9X	15.2X
Risk of Testing Positive for COVID-19	Risk of Dying from COVID-19

compared to fully vaccinated persons.

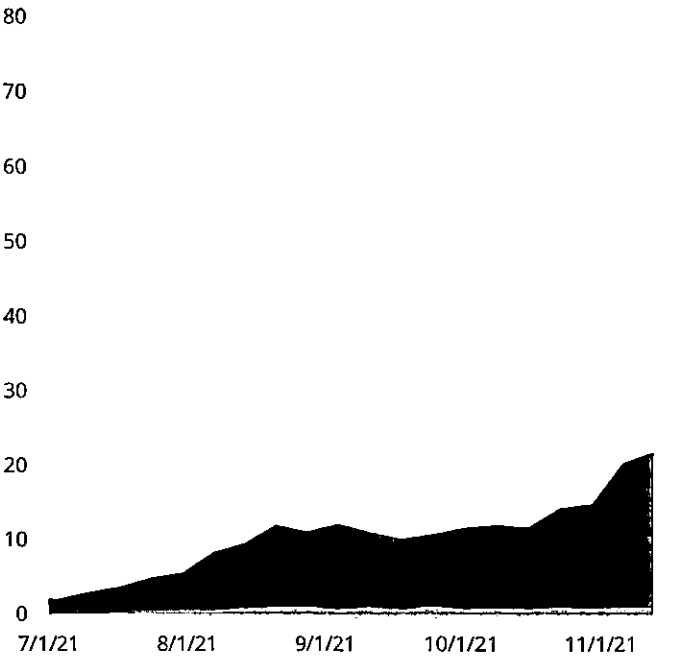
- COVID-19 vaccines are safe and effective tools to bring the pandemic under control.
- ADHS is working with CDC and local health departments to investigate SARS-CoV-2 infections among people who received COVID-19 vaccine to identify patterns or trends in patient characteristics, the administered vaccine, or variant strains.
- **Every week and across all age groups, people who were unvaccinated had a greater risk of testing positive for COVID-19 and a greater risk of dying from COVID-19 than people who were fully vaccinated.**

Age-Adjusted Rates of COVID-19 Cases and Deaths per 100K by Specimen Collection Date Among Fully Vaccinated and Unvaccinated People

Cases Per 100K



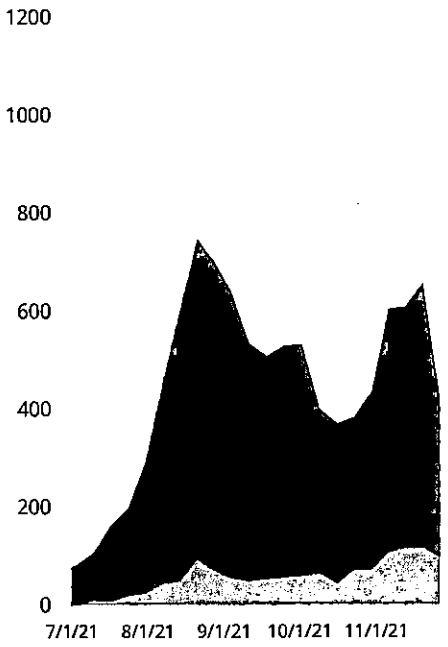
Deaths Per 100K



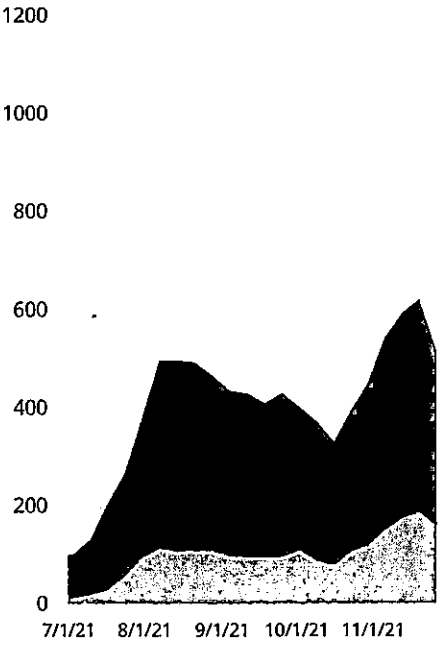
Rates of COVID-19 Cases per 100K by Specimen Collection Date Among Fully Vaccinated and Unvaccinated People

Stratified by Age Group

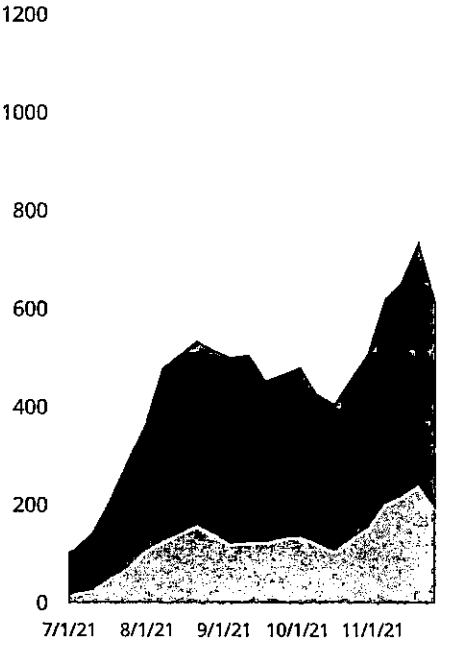
12–17 years



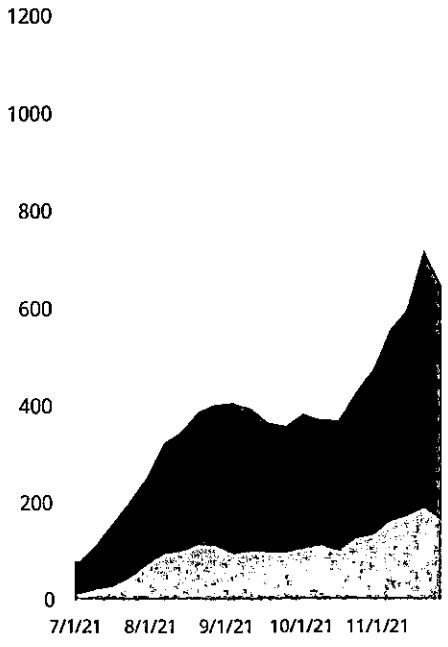
18–29 years



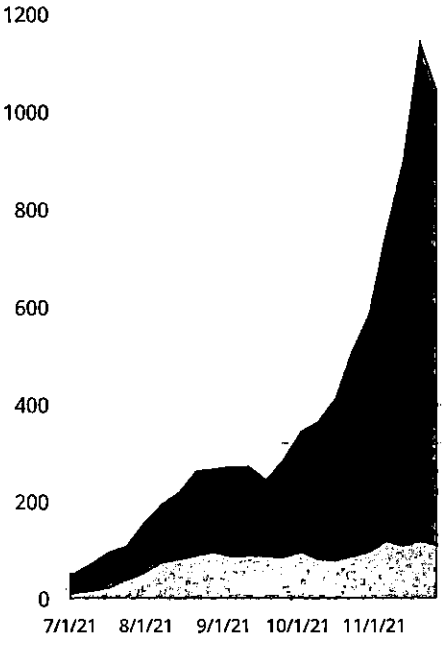
30–49 years



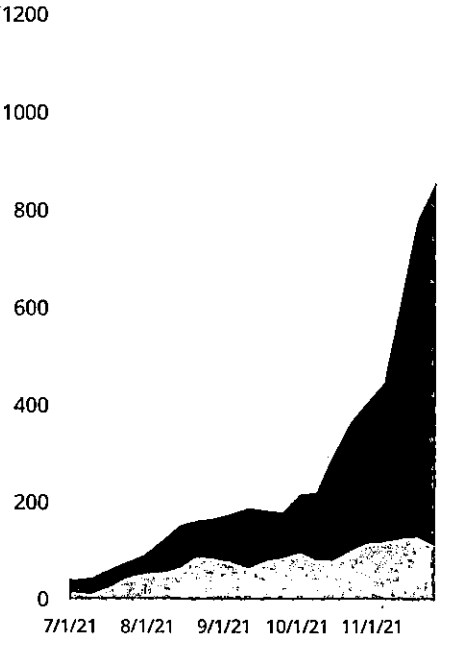
50–64 years



65–79 years



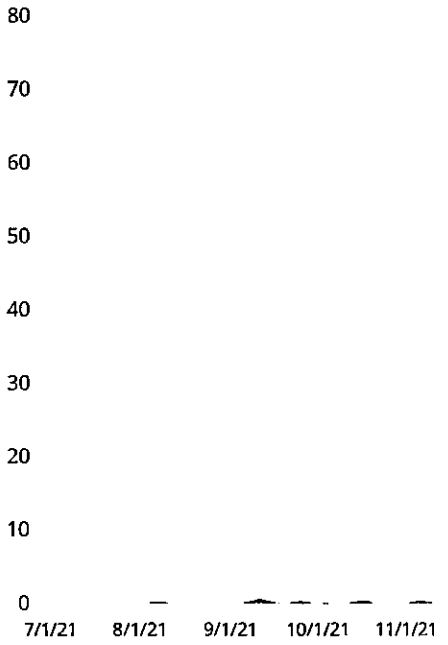
80 years and older



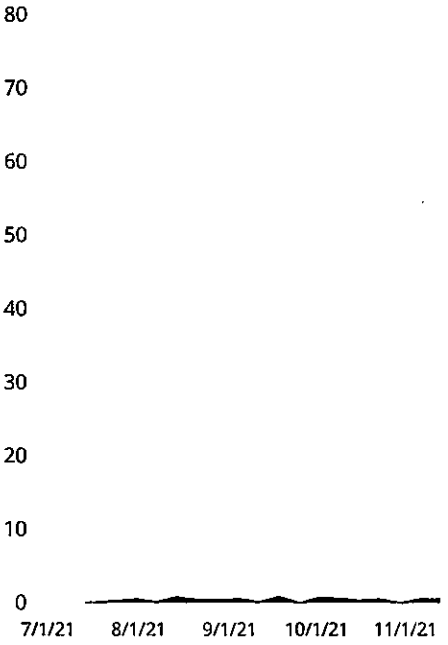
Rates of COVID-19 Deaths per 100K by Specimen Collection Date Among Fully Vaccinated and Unvaccinated People

Stratified by Age Group

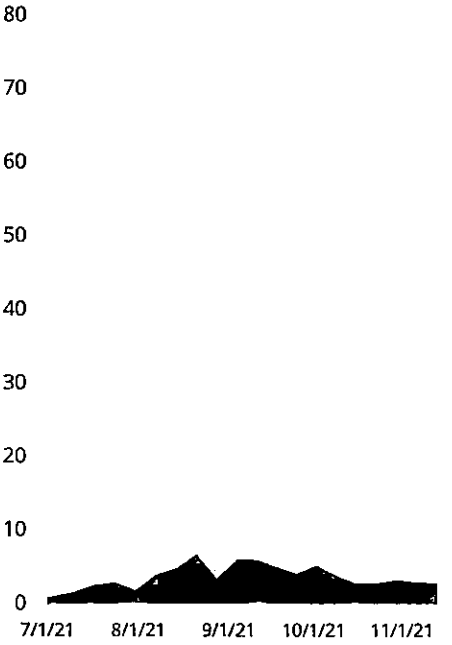
12–17 years



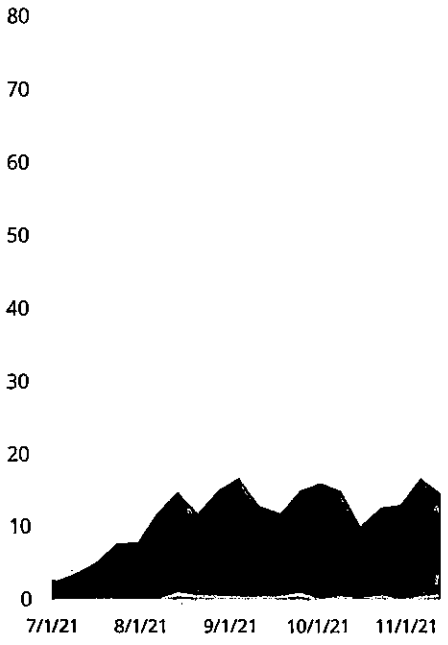
18–29 years



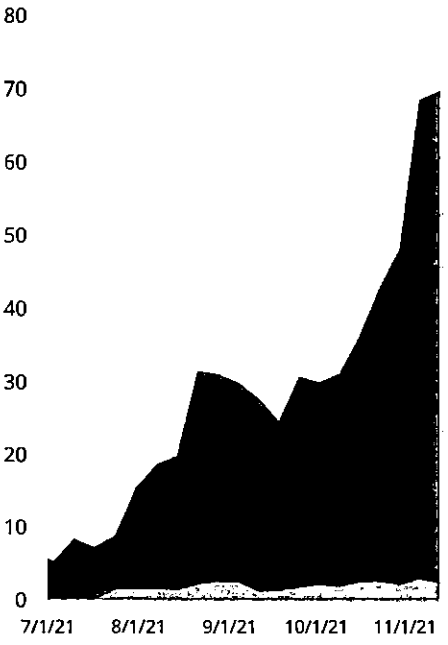
30–49 years



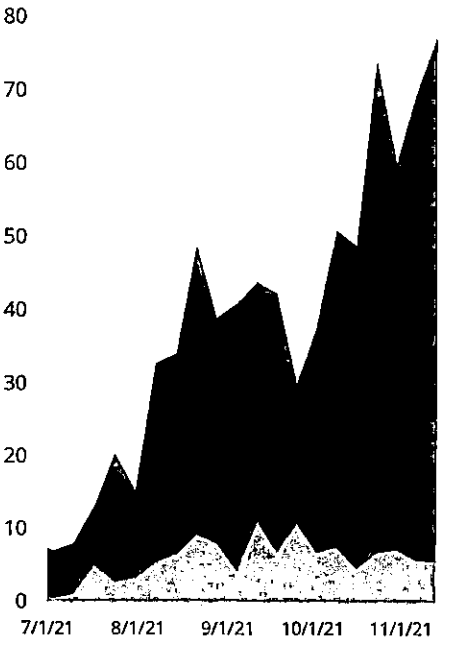
50–64 years



65–79 years

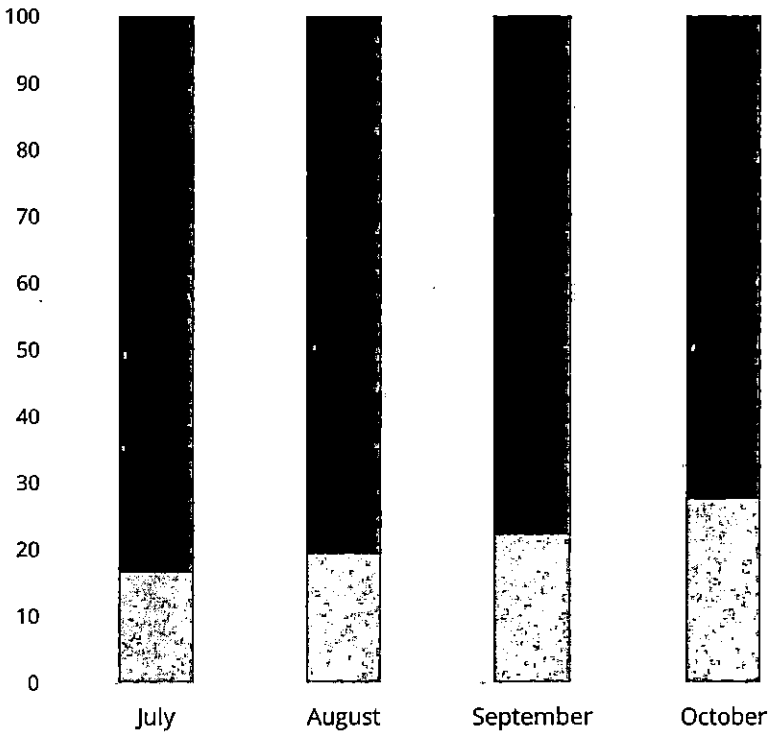


80 years and older

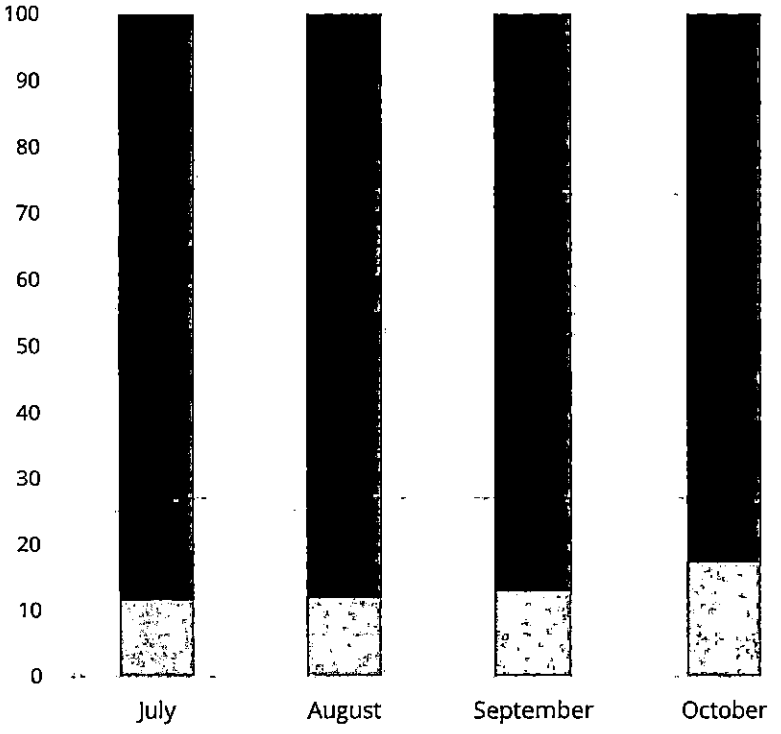


Percent of Fully Vaccinated vs. Unvaccinated COVID-19 Cases and Deaths by Month of Specimen Collection Date

Cases



Deaths



About the Data:

- Data timeframe included in the report was selected based off when the Delta variant became the dominant strain in Arizona. Data excludes those who were determined to be partially vaccinated.
    - Rates of COVID-19 Cases: 6/20/2021 – 11/27/2021
    - Rates of COVID-19 Deaths: 6/20/2021 – 11/13/2021
        - Death data have a month lag in order to help with data completeness.
- Vaccination status:
    - Fully vaccinated: persons with SARS-CoV-2 RNA or antigen detected from a respiratory specimen collected ≥14 days after the completion of a primary series of an FDA-authorized or approved COVID-19 vaccine.
    - Unvaccinated: persons with SARS-CoV-2 RNA or antigen detected from a respiratory specimen with no verified record of receiving an FDA-authorized or approved COVID-19 vaccine.
    - Excluded were partially vaccinated persons with SARS-CoV-2 RNA or antigen detected from a respiratory specimen with at least one documented dose of an FDA-authorized or approved COVID-19 vaccine, but a primary series was not completed ≥14 days before a specimen was collected.
- Incidence rates in the report are weekly rates grouped by age and calculated by dividing the number of cases or deaths by the population fully vaccinated or unvaccinated then multiplied by 100,000. The overall incidence rates are standardized by age.
- Rates are not adjusted for the length of time since vaccination, underlying conditions, or most demographic factors, aside from age.
- Incidence rate ratios (IRRs) are provided for the most recent month with complete case and death data. These ratios are calculated by dividing the average weekly incidence rates among unvaccinated by the incidence rates of the fully vaccinated.
- Additional resources:
    - Monitoring Incidence of COVID-19 Cases, Hospitalizations, and Deaths, by Vaccination Status — 13 U.S. Jurisdictions, April 4–July 17, 2021
    - Rates of COVID-19 Cases and Deaths by Vaccination Status

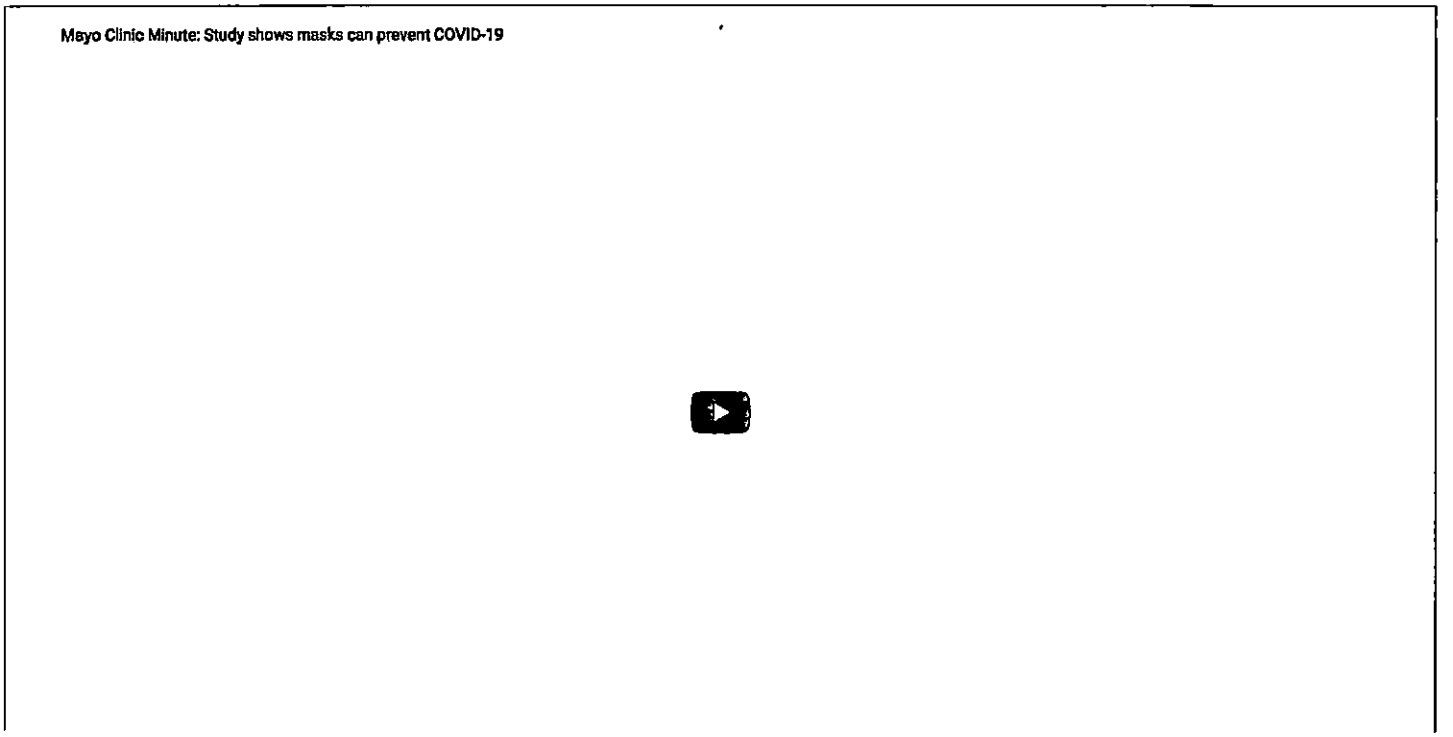
By Jason Howland

Mayo Clinic Minute: Study shows masks can prevent COVID-19

Mayo Clinic researchers recently published a study (https://www.sciencedirect.com/science/article/abs/pii/S0025619621004018?dgcid=author) that shows the proper use of masks reduces the spread of respiratory droplets. The findings strongly support the protective value and effectiveness of widespread mask use and maintaining physical distance in reducing the spread of COVID-19 (https://www.mayoclinic.org/coronavirus-covid-19).

Reporter Jason Howland has more in this Mayo Clinic Minute.

Watch: The Mayo Clinic Minute (https://youtu.be/9fca7M5STEA)



Journalists: Broadcast-quality video (0:59) is in the downloads at the end of this post. Please courtesy: "Mayo Clinic News Network." Read the script (https://cdn.prod-carehubs.net/n7-mcnn/7bcc9724adf7b803/uploads/2020/12/MCM-Mask-study.pdf).

Do face masks work at preventing COVID-19 transmission?

"Masks don't work unless we wear them," says Dr. Elie Berbari (https://www.mayoclinic.org/biographies/berbari-elie-f-m-d/bio-20053110?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&cauid=100721), a Mayo Clinic infectious diseases physician.

That's what Mayo Clinic researchers say they proved in a recent study.

"We found objectively that masks are critically important. They're very effective at protecting the people around you. If you're wearing a mask, you're protecting others. If they're wearing masks, they're protecting you," says Dr. Matthew Callstrom (https://www.mayoclinic.org/biographies/callstrom-matthew-r-m-d-ph-d/bio-20054437?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&cauid=100721), a Mayo Clinic radiologist and one of the study's authors.

The experiments used masked and unmasked mannequins that simulated the spread of respiratory droplets and measured it at various distances.

"The most important transmission of a COVID-19 particle is a respiratory droplet. We measured the aerosol particles which are even smaller. And we found that masking was very effective even for those particles, the smallest ones," says Dr. Callstrom.

The study showed that disposable paper medical masks and two-layer cloth masks reduced droplet transmission.

"We're all tired of wearing masks. But I think this is really highlighting the importance of it," says Dr. Berbari.

ANIMATION - Mask Containment Droplet Spread

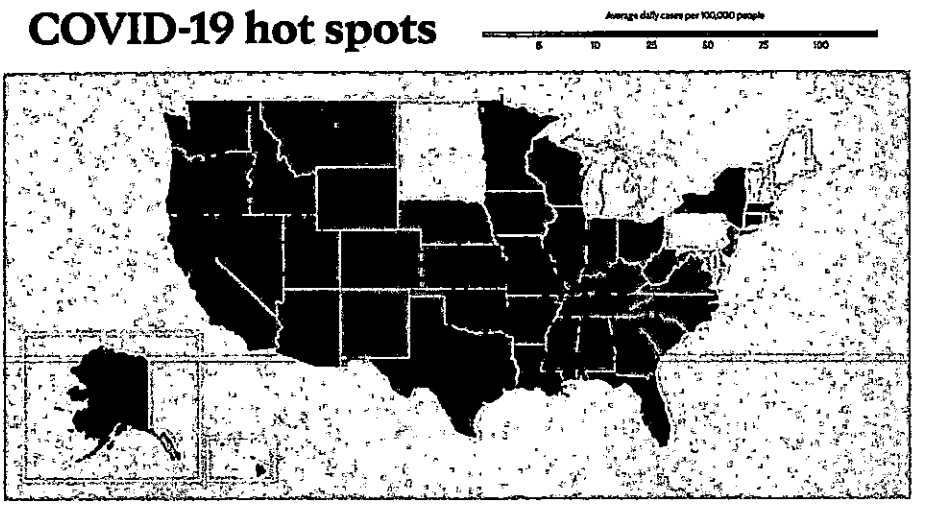
For the safety of its patients, staff and visitors, Mayo Clinic has strict masking policies in place. Anyone shown without a mask was recorded prior to COVID-19 or recorded in an area not designated for patient care, where social distancing and other safety protocols were followed.

Information in this post was accurate at the time of its posting. Due to the fluid nature of the COVID-19 pandemic, scientific understanding, along with guidelines and recommendations, may have changed since the original publication date.

For more information and all your COVID-19 coverage, go to the Mayo Clinic News Network (https://newsnetwork.mayoclinic.org/tag/covid-19/?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&invsrc=other&cauid=100721) and mayoclinic.org (https://www.mayoclinic.org/coronavirus-covid-19?_ga=2.7498668.1569712837.1596543416-587753885.1596543416?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&invsrc=other&cauid=100721).

Learn more about tracking COVID-19 and COVID-19 trends (https://www.mayoclinic.org/coronavirus-covid-19/map?_ga=2.211374101.1839374084.1604531163-492385979.1604531163?mc_id=us&utm_source=newsnetwork&utm_medium=l&utm_content=content&utm_campaign=mayoclinic&geo=national&placementsite=enterprise&invsrc=other&cauid=100721).

(https://www.mayoclinic.org/coronavirus-covid-19/map)



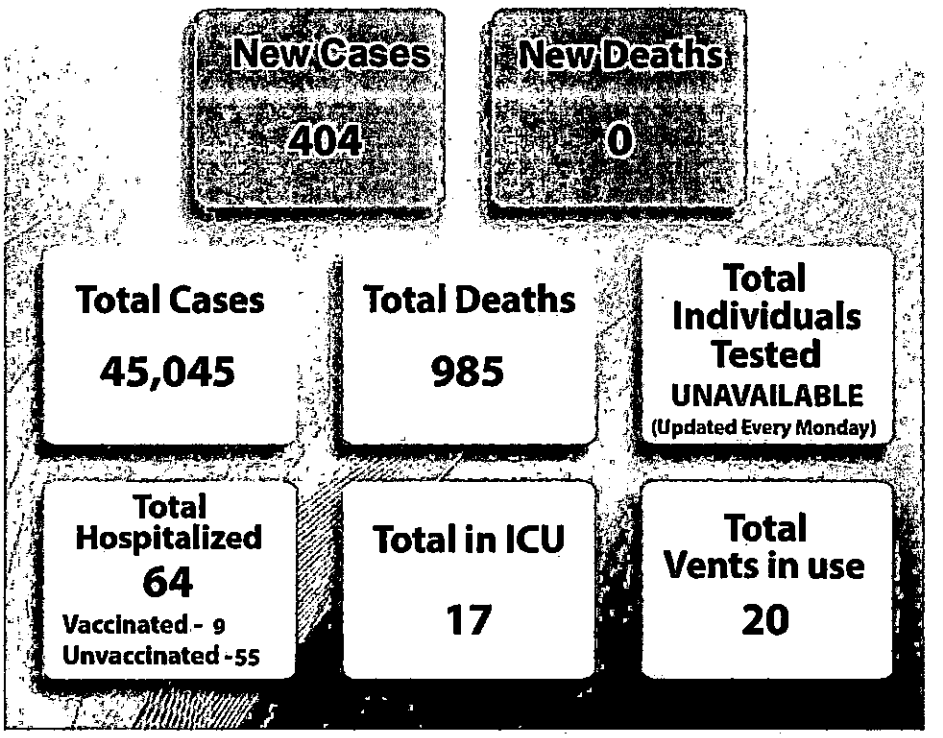
#Newsapp (https://newsnetwork.mayoclinic.org/tag/newsapp/) #coronavirus disease 2019 (https://newsnetwork.mayoclinic.org/tag/coronavirus-disease-2019/) #COVID-19 (https://newsnetwork.mayoclinic.org/tag/covid-19/) #daily (https://newsnetwork.mayoclinic.org/tag/daily/) #Dr. Elie Berbari (https://newsnetwork.mayoclinic.org/tag/dr-elie-berbari/) #Dr. Matthew Callstrom (https://newsnetwork.mayoclinic.org/tag/dr-matthew-callstrom/) #face masks (https://newsnetwork.mayoclinic.org/tag/face-masks/) #Highlight (https://newsnetwork.mayoclinic.org/tag/highlight/) #Infectious Diseases (https://newsnetwork.mayoclinic.org/tag/infectious-diseases-2/) #Jason Howland (https://newsnetwork.mayoclinic.org/tag/jason-howland/) #Mayo Clinic Minute (https://newsnetwork.mayoclinic.org/tag/mayo-clinic-minute/)

Yuma County COVID-19 DAILY UPDATE

3:00 PM, MONDAY, JANUARY 3, 2022

COVID-19 in Yuma County

Current as of 01-03-2022



Yuma County Health Officials confirm 404 new cases of COVID-19 and 0 new deaths, bringing the total cases to 45,045 and total deaths to 985. Health officials are conducting contact investigations.

WEEKEND & HOLIDAY NUMBERS:

Friday, December 31, 2021 –118 new cases, 0 deaths
Saturday, January 1, 2022 - 266 new cases, *3 deaths
Sunday, January 2, 2022 - 0 new cases, 0 deaths

***NOTE:** Based on the ADHS/County Vital Records Surveillance Information, reported deaths occurred as described below:

- **12/19/2021 (1)**
- **12/25/2021 (1)**
- **12/26/2021 (1)**

Vaccination is the best way to protect yourself, your family, and your community against COVID-19. Vaccines are effective in preventing severe illness, hospitalization, and death; they also help reduce the spread of the virus in our community.

The Health District is providing COVID-19 vaccine clinics Monday through Thursday from 8:30 am to 11:30 am and 1:00 pm to 4:00 pm. Onsite vaccine clinics resume January 4, 2022. **You must schedule an appointment.**

NOTE: The Yuma County Public Health Services District is now offering the Pfizer COVID-19 Vaccine, authorized for children and adolescents ages 5 -11.

The Moderna vaccine currently can be given to anyone age 18 and over. More information can be found on the CDC's website.

The Pfizer vaccine currently can be given to anyone age 5 and over. More information can be found on the CDC's website

For more information about what you will need to bring with you to your appointment, please visit the Health District's Immunization Program page or call (928) 317-4550.

Due to overwhelming demand for both initial vaccine and booster appointments, the Yuma County Public Health District **is no longer taking walk-ins** and are asking the public to call (928) 317-4550 to make an appointment.

COVID-19 Booster Update:
Yuma County Public Health Services District is offering COVID-19 Booster Vaccines for anyone eligible. Moderna, Pfizer, and Johnson & Johnson vaccines are available; however, doses of Johnson & Johnson may be limited. Please call ahead for availability at 928-317-4550. **You must schedule an appointment.**

NOTE: BOOSTER APPOINTMENTS are booked until next week. Local pharmacies, primary care physicians and clinics like Sunset Health and Regional Center for Border Health also have vaccines for boosters

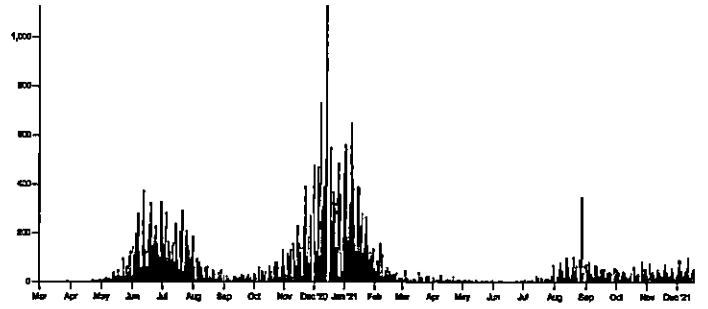
Testing is available at many locations in Yuma County, click here for details.

Please visit the Arizona Department of Health Services – Vaccine Finder for the most up-to-date information on where vaccine is currently available. The website is updated frequently.

PUBLIC is invited to follow us on FACEBOOK & TWITTER as well as sign up for Yuma County eNOTIFICATIONS

Trends

METRIC: Cases | PAST # OF DAYS: All time | LOCATIONS: Yuma County, AZ

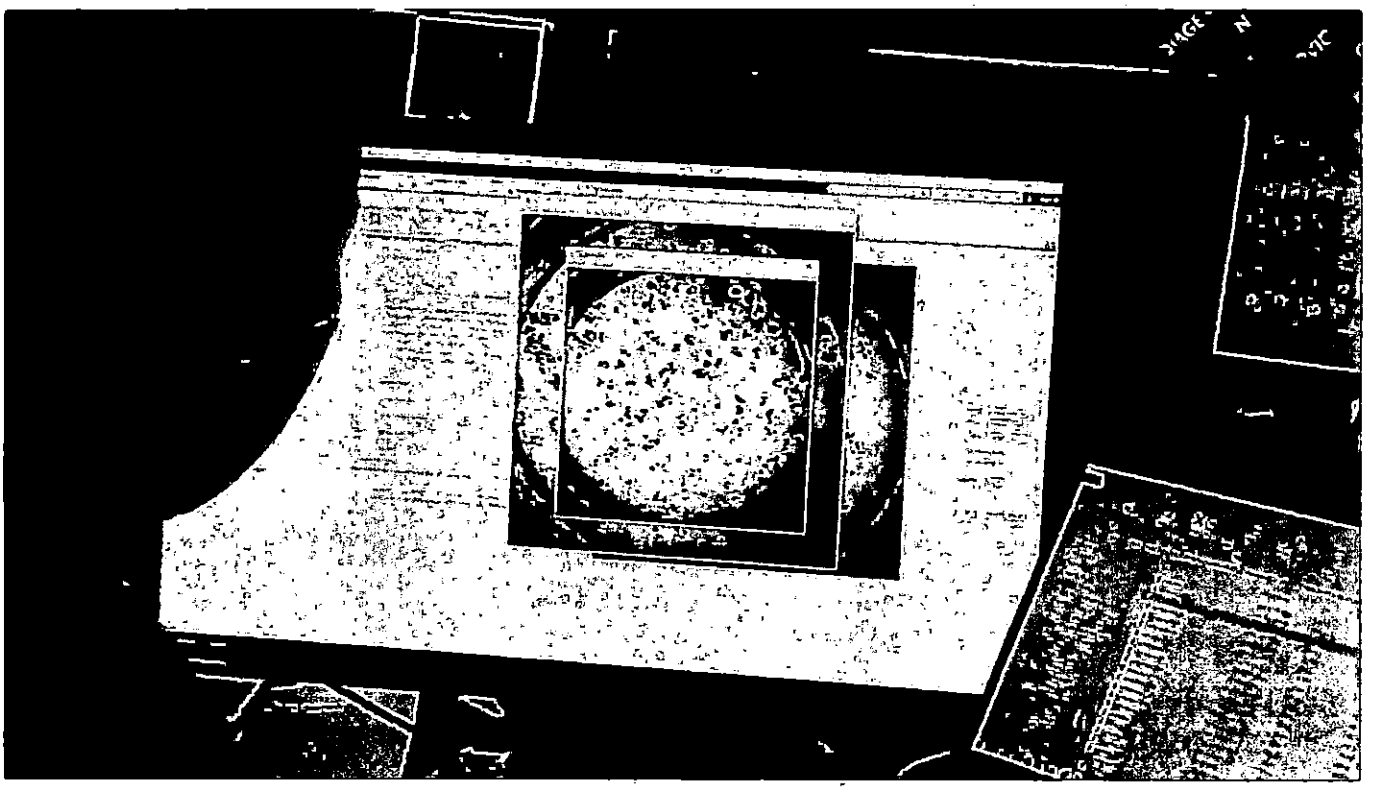


Cases 7 Day Average | Share

https://www.azfamily.com/news/continuing_coverage/coronavirus_coverage/vaccine_headquarters/first-case-of-omicron-covid-19-variant-found-in-arizona/article_f6f5eb52-587e-11ec-a7cd-8fcc5b398053.html

First case of Omicron COVID-19 variant found in Arizona

ARIZONA'S FAMILY DIGITAL NEWS STAFF
POSTED DEC 6, 2021



(Source: 3TV/CBS 5)

Family mourns after parents die from COVID-19 as holiday season approaches

YAVAPAI COUNTY, AZ (3TV/CBS 5) – The Arizona Department of Health Services and Yavapai County Community Health Services confirmed the state's first known case of the COVID-19 Omicron variant on Wednesday.

The announcement comes on the same day ADHS issued a new report that looked at COVID-19 cases and death rates by vaccination status during October. During that month, ADHS found that unvaccinated Arizonans had a 3.9 times greater risk of testing positive for the coronavirus, and a 15.2 times greater risk of dying from the virus.

"Much remains unknown about the Omicron variant at this time, including whether it is more transmissible and more capable of producing severe illness than the Delta variant," said Don Herrington, ADHS interim director. "We do know that current COVID-19 vaccines have remained very effective against Delta and other variants, and I strongly encourage Arizonans to get vaccinated if they aren't already and make sure they're current on their booster dose if they are fully vaccinated."

Our best response to the Omicron variant, as with any other variant of concern, is renewing our focus on vaccination and following recommendations, such as staying home when sick, that are proven to reduce the spread."

To find a vaccination provider, click here or call the bilingual Arizona COVID-19 Hotline at 844.542.8201. For more information COVID-19 in Arizona, click here.

Arizona's Family Digital News Staff

COVID-19

Science Brief: Omicron (B.1.1.529) Variant

Updated Dec. 2, 2021

On November 24, 2021, South Africa reported the identification of a new SARS-CoV-2 variant, B.1.1.529, to the World Health Organization (WHO). B.1.1.529 was first detected in specimens collected on November 11, 2021 in Botswana and on November 14, 2021 in South Africa. South Africa has since detected B.1.1.529 in specimens collected on November 8, 2021. On December 1, 2021, the first case attributed to B.1.1.529 was reported in the United States in a person who returned from travel to South Africa. A second case was reported on December 2, 2021 in a person with no international travel history who also attended a convention in the days preceding symptom onset. The Omicron variant has also been detected in travel-related cases in several European countries, as well as Australia, Brazil, Canada, Hong Kong, Israel, Japan, Nigeria, Norway, Sweden, and the United Kingdom. A few countries, including the United States, have reported cases in individuals without travel history to southern Africa.

On November 25, 2021, the United Kingdom Health Security Agency designated B.1.1.529 as a Variant Under Monitoring (VUI-21-NOV-01) [1]. On November 26, 2021, the Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)[2] convened to assess B.1.1.529. The TAG-VE advised WHO that this variant should be designated as a Variant of Concern (VOC), and WHO designated B.1.1.529 as a VOC named Omicron.[3]

The WHO classification as a VOC was based on epidemiological data indicating an increase in infections in South Africa in recent weeks that coincided with detection of Omicron. Omicron has many concerning spike protein substitutions, some of which are known from other variants to be associated with reduced susceptibility to available monoclonal antibody therapeutics or reduced neutralization by convalescent and vaccinee sera. The European Center for Disease Prevention and Control also classified this variant as a VOC due to concerns "regarding immune escape and potentially increased transmissibility compared to the Delta variant."[4]

The SARS-CoV-2 Interagency Group (SIG), established by the U.S. Department of Health and Human Services, is responsible for variant classifications in the United States.[1] The SIG meets regularly to evaluate the risk posed by SARS-CoV-2 variants circulating in the United States and globally and to make recommendations about the classification of variants. On November 30, 2021, the SIG made the decision to classify the Omicron variant as a Variant of Concern (VOC). This decision is based on a number of factors, including, detection of cases attributed to Omicron in multiple countries, including among those without travel history, transmission and replacement of Delta as the predominant variant in South Africa, the number and locations of substitutions in the spike protein, and available data for other variants with fewer substitutions in the spike protein indicating a reduction in neutralization by vaccinee and convalescent sera and certain monoclonal antibody treatments.

There are two variants classified as a VOC by the United States: Omicron and Delta. As of December 2, 2021, two confirmed cases attributed to the Omicron variant have been detected in the United States and additional possible Omicron cases are being investigated. Delta continues to be the predominant circulating variant. On August 26, 2021, CDC published information on What We Know About the Delta Variant. Importantly, nearly all lineages designated as Delta remain susceptible to available monoclonal antibody therapeutics, and vaccines continue to be highly effective against severe illness, hospitalization, and death among people infected with the Delta variant.

[1]The SIG includes representatives from the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), Food and Drug Administration (FDA), Biomedical Advanced Research and Development Authority (BARDA), and Department of Defense (DoD). This interagency group is focused on the rapid characterization of emerging variants and actively monitors their potential impact on critical SARS-CoV-2 countermeasures, including vaccines, therapeutics, and diagnostics.

Omicron (B.1.1.529) Characteristics

WHO Label: Omicron

Pango Lineage: B.1.1.529

Nextstrain clade: 21K

The spike protein of the Omicron variant is characterized by at least 30 amino acid substitutions, three small deletions, and one small insertion. Notably, 15 of the 30 amino acid substitutions are in the receptor binding domain (RBD). There are also a number of changes and deletions in other genomic regions.

- Key Amino Acid Substitutions in Spike Protein (RBD substitutions in bold type): A67V, del69-70, T95I, del142-144, Y145D, del211, L212I, ins214EPE, G339D, S371L, S373P, S375F, K417N, N440K, G446S, S477N, T478K, E484A, Q493R, G496S, Q498R, N501Y, Y505H, T547K, D614G, H655Y, N679K, P681H, N764K, D796Y, N856K, Q954H, N969K, L981F

Transmissibility: Currently, it is unknown how efficiently the Omicron variant can spread from person to person. The replacement of Delta by Omicron as the predominant variant in South Africa raises concerns that the Omicron variant may be more transmissible than Delta, but due to the low number of cases in South Africa when Omicron emerged, it is unclear if this variant is more transmissible than the Delta variant. Further, the relatively small number of cases documented to date makes it difficult to estimate transmissibility. Analysis of the changes in the spike protein indicate that the Omicron variant is likely to have increased transmission compared to the original SARS-CoV-2 virus, but it is difficult to infer if it is more transmissible than Delta.

- N501Y increases binding to the ACE2 receptor, which could increase transmission, and the combination of N501Y and Q498R may increase binding affinity even more; however, other substitutions in the Omicron spike protein are expected to decrease binding to ACE2. As such, receptor binding affinity needs to be assessed using the full spectrum of spike protein substitutions found in the Omicron variant.
- H655Y is proximal to the furin cleavage site and may increase spike cleavage, which could aid transmission.
- N679K is proximal to and adds to the polybasic nature of the furin cleavage site, which may also increase spike cleavage and could aid transmission.
- P681H has been shown to enhance spike cleavage, which could aid transmission. This mutation is found in Alpha and an alternate mutation at this position (P681R) is found in Delta.

Disease Severity: Currently, it is unclear if infection with the Omicron variant is associated with more severe disease. Due to the small number of cases attributed to the Omicron variant, assessment of disease severity is difficult. Preliminary information from South Africa indicates that there are no unusual symptoms associated with Omicron variant infection, and as with other variants, some patients are asymptomatic.[5]

Impact on Vaccine-induced Immunity or Immunity from Previous Infection: Currently, there are no data available to assess the ability of sera from vaccinated persons or those with previous SARS-CoV-2 infection to neutralize the Omicron variant. However, the U.S. Government SIG and global public health partners are working to generate these data in laboratory settings and will also continue to monitor epidemiological and clinical indicators.

The spike protein is the primary target of vaccine-induced immunity. The Omicron variant contains more changes in the spike protein than have been observed in other variants, including 15 in the RBD. Based on the number of substitutions, the location of these substitutions, and data from other variants with similar spike protein substitutions, significant reductions in neutralizing activity of sera from vaccinated or previously infected individuals, which may indicate reduced protection from infection, are anticipated.

Laboratory and epidemiological studies are needed to assess the impact of the Omicron variant on vaccine effectiveness and breakthrough infections, including in individuals who have received booster doses. However, vaccination is anticipated to continue to offer protection against hospitalization and death, and vaccines continue to play a critical role in controlling the COVID-19 pandemic.

Impact on Monoclonal Antibody Treatments: Currently, there are no virus-specific data available to assess whether monoclonal antibody treatments will retain efficacy against the Omicron variant. Based on data from other variants with significantly fewer changes in the RBD, the expectation is that the Omicron variant will remain susceptible to some monoclonal antibody treatments, while others may have less potency.

Mutations within the RBD are most relevant for monoclonal antibody therapeutics available under Emergency Use Authorization (EUA). Currently, there are three monoclonal antibody treatments with EUA: Sotrovimab ↗, Bamlanivimab and Etesevimab ↗, and REGEN-COV ↗.

The table below shows data only for single RBD substitutions that are within the binding site of the indicated monoclonal antibody. However, mutations in the monoclonal antibody binding site do not always result in a loss of binding or neutralization. Importantly, data are needed with the full spectrum of spike protein changes to understand the impact on available monoclonal antibody therapeutics. As data becomes available, the Department of Health and Human Services will rapidly communicate changes in treatment guidance to public health departments and health care providers, as appropriate.

In vitro Therapeutic Activity of Single RBD Substitutions found in Omicron¥
Data in the table shows data available on the NCATS OpenData Portal[6] that has been tested against a viral variant containing only a single amino acid substitution from a wild-type SARS-CoV-2 in an in vitro neutralization assay.

RBD Substitution	Eli Lilly – Bamlanivimab	Eli Lilly – Etesevimab	Regeneron – Imdevimab	Regeneron – Casirivimab	GSK/VIR-Sotrovimab
G339D					1.18*
S371L					
S373P	No data available				
S375F					
K417N	0.12* 0.367*	>1,000* 381.6*	0.0789* 0.25* 1.2^ 1.35*	4.3* 5.67* 7* (7) 13.1* 48.74*	
N440K	No data available		95.63* (28)	1*	0.48*
G446S			No data available		
S477N		0.5*	2.28*	0.91* 2.85*	
T478K	1.25*	0.231^	0.571^	0.5*	
E484A	No data available			No data available	
Q493R	(100)	No data available		(70)	
G496S	No data available				
Q498R			No data available	No data available	
N501Y	1* 1.13^ (5)	1.65* 2.6* 2.9* (5)	0.1* 0.2* 0.5* 0.62^ 0.75^ 0.77* 0.95* (2)		
Y505H		No data available			

¥ data as of December 1, 2021
* denotes data from a publication; references below[7, 8, 9, 10, 11, 12, 13, 14, 15]
( ) denotes data from FDA EUA Fact Sheets
Black shaded cells indicate that the substitution is not located in the monoclonal antibody epitope binding region

Impact on Diagnostics: For the most up to date information and guidance on diagnostic assays, which will be updated to reflect the impact of the Omicron variant, please refer to the U.S. Food and Drug Administration web page on SARS-CoV-2 Viral Mutations: Impact on COVID-19 Tests ↗.

- The CDC 2019-Novel Coronavirus (2019-nCoV) Real-Time RT-PCR Diagnostic Panel and the Multiplex Assay for Flu and SARS-CoV-2 are expected to detect the Omicron variant.
- The Thermo Fisher TaqPath COVID-19 Combo Kit (3 total targets) has significantly reduced S-gene target sensitivity due to the deletion at H69 and V70 in the B.1.1.529 (Omicron) spike protein. Specimens being tested using the TaqPath COVID-19 Combo Kit that yield an S gene target failure (SGTF) *could* be Omicron. Importantly, any possible Omicron specimen must be confirmed by sequencing. Since the TaqPath COVID-19 Combo Kit is designed to detect multiple genetic targets, the overall test sensitivity should not be impacted.[16]

Scientists are working to learn more about the Omicron variant to better understand how easily it might be transmitted and the effectiveness of currently authorized or approved medical countermeasures, such as vaccines, therapeutics, and diagnostic tests, against this variant. New information about the virologic, epidemiologic, and clinical characteristics of the Omicron variant is rapidly emerging. CDC and other federal agencies are working closely with international public health agencies to monitor the situation closely. CDC will provide updates as more information and data become available.

Public Health Response to the Omicron Variant

On December 1, 2021, the first case attributed to the Omicron variant was identified in the United States in a person who recently return from travel to South Africa. A second case was reported on December 2, 2021 in a person with no international travel history who also attended a convention in the days preceding symptom onset. Additional possible Omicron cases are under investigation. CDC's national genomic surveillance efforts are statistically powered to detect a variant that is circulating at 0.1% with 99% confidence and can monitor changes over time. CDC and the SIG are implementing several activities in response to the Omicron variant that are summarized below.

- Implementation of Enhanced Surveillance under the National SARS-CoV-2 Strain Surveillance (NS3) Program – In partnership with U.S. public health laboratories and the Association of Public Health Laboratories, CDC is implementing enhanced surveillance for specimens with S-gene target failures (SGTFs) by requesting public health laboratories to send SGTF specimens to CDC as quickly as possible to speed the confirmation of possible Omicron cases and subsequent virological characterization. If public health laboratories detect Omicron through state-level surveillance activities, CDC is also requesting public health laboratories send sequence-confirmed Omicron specimens to CDC for virological characterization.
  - CDC and other federal agencies continue to work with international partners to learn more about variants circulating globally and will continue to monitor all data sources closely to identify cases of Omicron in the United States.

- Airport Surveillance Post-Arrival Testing and Sequencing – CDC is collaborating with two commercial partners on a SARS-CoV-2 surveillance program that involves voluntary testing of arriving international travelers at select U.S. airports. Arriving air travelers are offered[1] pooled testing conducted in the airport and offered at-home kits for saliva sampling that are taken 3-5 days after arrival and returned to the laboratory for RT-PCR testing. All positive samples are sequenced, enabling detection of novel SARS-CoV-2 variant among travelers entering the United States. On Sunday November 28, 2021, the program began expanding to test air travelers entering the United States from southern Africa, including passengers making connections through Europe.

- Prioritization of laboratory studies – The SIG has prioritized laboratory studies to evaluate the impact on available medical countermeasures, such as vaccines, therapeutics, and diagnostics. These studies include assessing the ability of vaccines and convalescent sera to neutralize the Omicron variant

vaccines, therapeutics, and diagnostics. These studies include assessing the ability of vaccinee and convalescent sera to neutralize the Omicron variant, the susceptibility of the variant to treatments, and the ability of vaccine-induced immunity to protect against illness and death.

- Support for state, local, tribal, and territorial health departments – CDC is working closely with jurisdictions to facilitate rapid, bidirectional sharing of information. CDC staff are available to provide in-person or remote technical support for the public health response to the Omicron variant, including investigations of the epidemiologic and clinical characteristics of Omicron or other SARS-CoV-2 variant infections.
- Travel: On Friday, November 26, 2021, the White House issued a Presidential Proclamation suspending entry from eight countries in southern Africa for foreign nationals who were physically present in those countries during the 14 days prior to travel. CDC is working to modify the current Testing Order for travel as we learn more about the Omicron variant; a revised order would shorten the timeline for required testing for all international air passengers to one day before departure to the United States. This strengthens already robust protocols in place for international travel, including requirements for foreign nationals to be fully vaccinated. CDC continues to monitor the global epidemiology of the Omicron variant. This is a rapidly evolving situation and CDC will adjust travel recommendations and requirements, as necessary. For the most current information about travel recommendation and requirements, see International Travel.
  - CDC continues to recommend:
    - All travelers should get a COVID-19 viral test 3-5 days after arrival.
    - Travelers who are not fully vaccinated should self-quarantine for 7 days, even if their test is negative.
    - Travelers should self-isolate if they test positive or develop COVID-19 symptoms.
  - These measures are required for foreign national who are not fully vaccinated.
- Vaccination: The COVID-19 vaccines approved or authorized in the United States are highly effective at preventing severe disease and death, but they are not 100% effective, and some fully vaccinated people will become infected (breakthrough infection) and experience illness. For all eligible persons, the vaccine provides the best protection against serious illness and death from COVID-19.
  - Vaccines are playing a crucial role in limiting spread of SARS-CoV-2 and minimizing severe disease. As of December 1, 2021, more than 197 million Americans are fully vaccinated and more than 233 million Americans have received at least one dose, and these numbers are increasing. Low vaccination coverage may drive increases in cases, which also increases the chances that variants could emerge.
  - Everyone 5 years and older is eligible for COVID-19 vaccination.
  - If you have received the first dose of a two dose primary vaccine series, you should get your second dose as close to the recommended 3-week or 4-week interval as possible.
  - Everyone ages 18 years and older should get a booster shot when they are eligible.
  - Data from clinical trials showed that a booster shot increased the immune response in trial participants who finished a Pfizer-BioNTech or Moderna primary series 6 months earlier or who received a J&J/Janssen single-dose vaccine 2 months earlier. With an increased immune response, people should have improved protection against COVID-19, including variants such as the Delta variant, which currently represents greater than 99% of circulating viruses in the United States. For Pfizer-BioNTech and J&J/Janssen, clinical trials also showed that a booster shot helped prevent COVID-19 with symptoms.
- Mitigation: Given what we know, layered prevention strategies are needed to reduce the transmission of Delta, Omicron, and all other SARS-CoV-2 variants. As we continue to build the level of vaccination nationwide and globally, we must also use all the prevention strategies available, including masking, improving ventilation, distancing, handwashing, and testing to slow SARS-CoV-2 transmission and stop the COVID-19 pandemic. CDC recommends that everyone ages 2 years or older, including those who are fully vaccinated, wear masks in public indoor places in areas of substantial or high transmission.

References

1. SARS-CoV-2 variants of concern and variants under investigation (publishing.service.gov.uk)
2. Terms of Reference for the Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE)
3. Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern (who.int)
4. Threat Assessment Brief: Implications of the emergence and spread of the SARS-CoV-2 B.1.1.529 variant of concern (Omicron) for the EU/EEA (europa.eu)
5. Frequently asked questions for the B.1.1.529 mutated SARS-CoV-2 lineage in South Africa – NICD
6. NCATS OpenData Portal: https://opendata.ncats.nih.gov/variant/activity/singlemutationvariant
7. The dual function monoclonal antibodies VIR-7831 and VIR-7832 demonstrate potent in vitro and in vivo activity against SARS-CoV-2 | bioRxiv
8. Antibody resistance of SARS-CoV-2 variants B.1.351 and B.1.1.7 | Nature
9. Ultrapotent antibodies against diverse and highly transmissible SARS-CoV-2 variants (science.org)
10. mRNA vaccine-elicited antibodies to SARS-CoV-2 and circulating variants | Nature
11. Convalescent-Phase Sera and Vaccine-Elicited Antibodies Largely Maintain Neutralizing Titer against Global SARS-CoV-2 Variant Spikes | mBio (asm.org)
12. SARS-CoV-2 variants resist antibody neutralization and broaden host ACE2 usage | bioRxiv
13. The monoclonal antibody combination REGEN-COV protects against SARS-CoV-2 mutational escape in preclinical and human studies – ScienceDirect
14. Reduced neutralization of SARS-CoV-2 B.1.617 by vaccine and convalescent serum – ScienceDirect
15. Multispecific DARPin® therapeutics demonstrate very high potency against SARS-CoV-2 variants in vitro | bioRxiv
16. SARS-CoV-2 Viral Mutations: Impact on COVID-19 Tests | FDA

Last Updated Dec. 2, 2021
Content source: National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases

Omicron Variant: What You Need to Know

Updated Dec. 20, 2021

Omicron in the United States

CDC is working with state and local public health officials to monitor the spread of Omicron. As of December 20, 2021, Omicron has been detected in most states and territories and is rapidly increasing the proportion of COVID-19 cases it is causing.

Omicron Data and Potential Spread

CDC is expecting a surge of COVID-19 cases in the coming days to weeks. Learn more about Omicron variant surveillance and potential rapid spread.

COVID Data Tracker | Omicron Potential Spread

What We Know about Omicron

CDC has been collaborating with global public health and industry partners to learn about Omicron, as we continue to monitor its course. We don't yet know how easily it spreads, the severity of illness it causes, or how well available vaccines and medications work against it.

Spread

The Omicron variant likely will spread more easily than the original SARS-CoV-2 virus and how easily Omicron spreads compared to Delta remains unknown. CDC expects that anyone with Omicron infection can spread the virus to others, even if they are vaccinated or don't have symptoms.

Severe Illness

More data are needed to know if Omicron infections, and especially reinfections and breakthrough infections in people who are fully vaccinated, cause more severe illness or death than infection with other variants.

Vaccines

Current vaccines are expected to protect against severe illness, hospitalizations, and deaths due to infection with the Omicron variant. However, breakthrough infections in people who are fully vaccinated are likely to occur. With other variants, like Delta, vaccines have remained effective at preventing severe illness, hospitalizations, and death. The recent emergence of Omicron further emphasizes the importance of vaccination and boosters.

Treatments

Scientists are working to determine how well existing treatments for COVID-19 work. Based on the changed genetic make-up of Omicron, some treatments are likely to remain effective while others may be less effective.

We have the Tools to Fight Omicron

Vaccines

Vaccines remain the best public health measure to protect people from COVID-19, slow transmission, and reduce the likelihood of new variants emerging.

- COVID-19 vaccines are highly effective at preventing severe illness, hospitalizations, and death.
- Scientists are currently investigating Omicron, including how protected fully vaccinated people will be against infection, hospitalization, and death.
- CDC recommends that everyone 5 years and older protect themselves from COVID-19 by getting fully vaccinated.
- CDC recommends that everyone ages 18 years and older should get a booster shot at least two months after their initial J&J/Janssen vaccine or six months after completing their primary COVID-19 vaccination series of Pfizer-BioNTech or Moderna.

Masks

Masks offer protection against all variants.

- CDC continues to recommend wearing a mask in public indoor settings in areas of substantial or high community transmission, regardless of vaccination status.
- CDC provides advice about masks for people who want to learn more about what type of mask is right for them depending on their circumstances.

Testing

Tests can tell you if you are currently infected with COVID-19.

- Two types of tests are used to test for current infection: nucleic acid amplification tests (NAATs) and antigen tests. NAAT and antigen tests can only tell you if you have a current infection.
- Individuals can use the COVID-19 Viral Testing Tool to help determine what kind of test to seek.
  - Additional tests would be needed to determine if your infection was caused by Omicron.
  - Visit your state, tribal, local, or territorial health department's website to look for the latest local information on testing.
- Self-tests can be used at home or anywhere, are easy to use, and produce rapid results.
  - If your self-test has a positive result, stay home or isolate for 10 days, wear a mask if you have contact with others, and call your healthcare provider.
  - If you have any questions about your self-test result, call your healthcare provider or public health department.

Until we know more about the risk of Omicron, it is important to use all tools available to protect yourself and others.

What CDC is Doing to Learn about Omicron

Virus Characteristics

CDC scientists are working with partners to gather data and virus samples that can be studied to answer important questions about the Omicron variant. Scientific experiments have already started. CDC will provide updates as soon as possible.

Variant Surveillance

In the United States, CDC uses genomic surveillance to track variants of SARS-CoV-2, the virus that causes COVID-19 to more quickly identify and act upon these findings to best protect the public's health. CDC established multiple ways to connect and share genomic sequence data being produced by CDC, public health laboratories, and commercial diagnostic laboratories within publicly accessible databases maintained by the National Center for Biotechnology Information (NCBI) and the Global Initiative on Sharing Avian Influenza Data (GISAID). If a variant is circulating at 0.1% frequency, there is a >99% chance that it will be detected in CDC's national genomic surveillance.

Science Brief: Omicron (B.1.1.529) Variant

On November 24, 2021, South Africa reported the identification of a new SARS-CoV-2 variant, B.1.1.529, to the World Health Organization (WHO). B.1.1.529 was first detected in specimens collected on November 11, 2021 in Botswana and on November 14, 2021 in South Africa.

More on the Omicron (B.1.1.529) Variant

Emergence of Omicron

CDC has been using genomic surveillance throughout the course of the pandemic to track variants of SARS-CoV-2, the virus that causes COVID-19, and inform public health practice.

- November 24, 2021: A new variant of SARS-CoV-2, B.1.1.529, was reported to the World Health Organization (WHO). This new variant was first detected in specimens collected on November 11, 2021 in Botswana and on November 14, 2021 in South Africa.
- November 26, 2021: WHO named the B.1.1.529 Omicron and classified it as a Variant of Concern (VOC).
- November 30, 2021: The United States designated Omicron as a Variant of Concern.
- December 1, 2021: The first confirmed U.S. case of Omicron was identified.

Related Pages

- Symptoms
- Omicron Potential Spread
- Omicron Data
- About Variants

Last Updated Dec. 20, 2021
Content source: National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases