

December 2: The Omicron Variant and Workforce COVID-19 Vaccination Clinics

Today's issue features information from **Infectious Disease Specialist Michael G. Ison, MD**, and **Infectious Disease Research Assistant Professor Ramon Lorenzo Redondo, PhD**, about the omicron SARS-CoV-2 variant recently identified in South Africa. It also includes a reminder that the final COVID-19 vaccine clinic for members of the NM workforce will be the week of December 6.

OMICRON VARIANT

While much is still unknown about the omicron variant (B.1.1.529), researchers speculate that it may decrease efficacy of COVID-19 vaccines and increase the risk of reinfection. Emerging data also suggests that it may reduce the efficacy of monoclonal antibodies. The first case of this variant detected in the U.S. was reported yesterday in a fully vaccinated traveler from South Africa.

The first confirmed omicron infection was from a specimen collected on November 9 in South Africa. According to the World Health Organization (WHO) **GISAID global variant tracker**, 308 cases of the omicron variant have been reported in 21 countries as of December 1, with 224 of those occurring in South Africa, Ghana and Botswana. A U.S. travel ban from South Africa and several other African nations went into effect on Monday, November 29. The U.S. travel ban was issued for South Africa, Botswana, Zimbabwe, Namibia, Lesotho, Eswatini, Mozambique and Malawi and will be updated on a regular basis.

Genetic sequencing shows that the omicron variant is characterized by more than 50 mutations, which constitutes the highest number of mutations yet detected in a SARS-CoV-2 variant. This set of mutations includes more than 30 in the spike protein, the viral protein that attaches to the cell and is one of the main targets of the immune responses. The mutations include multiple changes within the two immunogenic regions of the spike protein, several small deletions, and changes in a region called the furin site, which is important for viral infectivity.

Some of the spike mutations have been shown to confer increased transmissibility and/or reduced immune recognition alone. Therefore, in addition to the preliminary observed increased transmissibility, the omicron variant may be associated with a reduction in immune recognition. Also of interest is that this variant is not related to delta. Because delta seemed to have become the recent common ancestor to most of the recently sampled sequences globally, the rapid increase of omicron indicates undetected viral dynamics.

The following information is provided, in part, by the WHO.

Transmissibility

It is not yet clear whether omicron is more transmissible compared to other variants, including delta. Preliminary evidence suggests an increased risk of reinfection with the variant, as compared to other variants of concern, and the number of cases of the omicron variant appears to be increasing in almost all provinces in South Africa. Positivity rates in the Tshwane region (which is in Gauteng Province) jumped from 1% to over 30% during the past three weeks alone, and almost all recent samples from the province have been the omicron variant. Epidemiologic studies are underway to understand if the increase in cases is because of omicron or other factors.

Severity of disease

It is not yet clear whether infection with omicron causes more severe disease compared to infections with other variants, including delta. Preliminary data suggests that there are increasing rates of hospitalization in South Africa, but this may be due to increasing overall numbers of people becoming infected, rather than a result of specific infection with omicron. There is currently no information to suggest that symptoms associated with omicron are different from those from other variants. Initial reported infections were among university students — younger individuals who tend to have more mild disease — but understanding the level of severity of the omicron variant may take several weeks.

Immune response from prior SARS-CoV-2 infection and vaccines

Preliminary evidence suggests there may be an increased risk of reinfection with omicron, as compared to other variants of concern. That's because some of the variant's 30 mutations in the spike protein are associated with immune escape for previous variants. However, it's possible that current vaccines will still be effective at preventing severe disease. Vaccines remain critical to reducing severe illness and death associated with COVID-19.

Effectiveness of current tests

The widely used PCR tests continue to detect infection, including infection with omicron, as we have seen with other variants as well. Studies are ongoing to determine whether there is any impact on other types of tests, including rapid antigen detection tests.

Effectiveness of current treatments

Antivirals, including remdesivir, molnupirivir and PF-07321332/ritonavir, as well as immune modulators, corticosteroids, and IL6 receptor and JAK inhibitors, will still be effective for managing patients with severe COVID-19. Other treatments will be assessed to see if they are still as effective given the changes to parts of the virus in the omicron variant.

The WHO and Centers for Disease Control and Prevention (CDC) recommend that individuals be reminded to take measures to reduce their risk of COVID-19, including proven public health measures such as wearing well-fitting masks, practicing hand hygiene and physical distancing, avoiding crowded spaces, and getting vaccines and boosters as appropriate. The CDC updated its booster guidance on Monday, advising that all adults ages 18 and up should get a booster six months after completing their initial mRNA two-dose series or two months after getting the Johnson & Johnson vaccine.

For the latest information about omicron and other variants of concern, please visit the [Update on Omicron](#) and [Tracking SARS-CoV-2 Variants](#) pages on the WHO website. For more information about travel restrictions related to the omicron variant, visit the [CDC website](#).


FINAL WORKFORCE COVID-19 VACCINE CLINICS ARE NEXT WEEK

Workforce vaccine clinics for the Pfizer-BioNTech COVID-19 vaccine booster and first and second doses are available the week of December 6. To get a COVID-19 vaccine booster at a workforce vaccine clinic, **schedule an appointment** now (login required). First and second dose vaccines are available on a walk-in basis.

Please note that McHenry Hospital is the only NM location offering Moderna boosters. If you prefer a Moderna booster and do not want to travel to McHenry, you can go to a retail pharmacy, such as Walgreens or CVS.

According to the CDC, all people age 18 and older who received the Pfizer, Moderna or Johnson & Johnson COVID-19 vaccine are eligible for a booster vaccine. A booster is given at least six months after the second dose of the Pfizer or Moderna vaccine, or two months after the single-dose Johnson & Johnson vaccine. You do not have to get a booster made by the same manufacturer as your initial vaccine.

The emergence of omicron underscores the importance of vaccination and booster shots. Over the next several weeks additional information will become available regarding the efficacy of the current vaccines against this new variant. Please continue to educate patients by sharing the facts about the new variant, as well as the importance of vaccination, and recommending boosters to those who meet the CDC criteria. Thank you for your continued leadership and support as the pandemic continues to evolve.



Gary A. Noskin, MD
Senior Vice President, Quality
Northwestern Memorial HealthCare
Chief Medical Officer
Northwestern Memorial Hospital