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COVID-19 Omicron Variant: What We Know, and What We Don't

Background

COVID-19 variant B.1.1.529 was officially designated a variant of concern and assigned the name Omicron by the World Health Organization (WHO) on [Nov. 26, 2021](#). Omicron exhibits numerous mutations, some of which overlap with other variants of concern such as Alpha, Beta and Delta and have been correlated with increased transmissibility, viral binding affinity and partial antibody escape. Other mutations observed in Omicron are new and/or have unknown effects. The BA.2 variant is a descendent of Omicron. This variant does not cause the S-gene target failure (SGTF), meaning it is now harder to pick up on PCR tests. Another subvariant – BA.5 – has been discovered and is now the dominant strain of the COVID-19 virus in the U.S. It's highly contagious and is resistant and able to evade immunity from a previous COVID-19 infection and vaccination. Although the BA.5 strain is more contagious, evidences does not show so far that it is any more likely to cause severe illness than any other variant.

In the fall of 2022, new “scrabble” variants were discovered. [The term “scrabble variant”](#) was coined by Peter Hotez, co-director of the Center for Vaccine Development at Texas Children's Hospital. BA.5 still accounts for many COVID-19 cases, but other variants are on the rise, particularly BQ.1 and BQ.1.1. Another variant occurring internationally is XBB, which first emerged in Singapore. The new variants are more resistant to the monoclonal antibodies.

Origin

WHO has indicated the first known sample was collected on Nov. 9, 2021 with another early sample collected on Nov. 11, 2021 in Botswana. Dutch public health authorities have confirmed two samples taken at Schiphol Airport suggest Omicron has been present in the Netherlands since at least [Nov. 9, 2021](#), but they were unable to identify the travelers' country of origin by the time the Omicron variant was identified in the samples. Scientists are still unsure where or when Omicron originated.

Current Spread

At the time of publication, Omicron cases have been confirmed in 190 countries, primarily situated in Africa, the United States and Europe. The first confirmed case was identified in the U.S. on [Dec. 1, 2021](#) and is now the dominant variant in the U.S. Real-time data on country submissions of Omicron cases sequenced is available [here](#).

Transmissibility

Data indicates Omicron is [significantly more transmissible than the Delta variant](#), which itself is far more transmissible than prior variants of concern and the original viral strain that emerged in late 2019.

Severity

Based on currently available data, Omicron is [less severe than Delta](#) and other past variants. A [study](#) of patients at Kaiser Permanente showed patients who were infected with the Omicron variant had substantially less risk of severe illness and shorter hospital stays than those infected with the Delta variant.

Testing

At present, most rapid and PCR tests appear able to detect Omicron as with previous variants. One PCR test developed by Thermo-Fisher has shown one of three target genes is not detected (called S-gene target failure), which may actually be helpful in monitoring spread as the test still detects the presence of the virus and the target failure assists in potentially identifying Omicron without advanced sequencing. Test manufacturers are [continuously monitoring efficacy](#) of various diagnostic instruments in the field.

Treatment and Vaccine Efficacy

There is not yet evidence to suggest existing treatments are more or less effective in addressing Omicron. Effectiveness of monoclonal antibodies is currently being assessed and other treatment regimens appear to be of similar efficacy as compared to other variants at this point in time. Thankfully, antivirals like Paxlovid and Remdesivir still provide full protection against the new variants at this time, and people can take preventative measures like getting the bivalent booster to protect themselves from getting infected with the new variants.

Employer Recommendations

The National Safety Council recommends employers continue to act in accordance with recommendations previously released through the *SAFER* initiative, including:

- 1) Continue to encourage vaccine uptake among unvaccinated workers.
 - Why? While attention has turned to boosters and childhood vaccinations as the next effective effort to slow the spread of COVID-19, the push to increase vaccine uptake among the unvaccinated and vaccine hesitant population is still crucial to the goal of reaching community immunity. Here are some actions you can consider to encourage unvaccinated workers to get the vaccine:
 - Counter myths and misinformation about the vaccine by providing factual information from reliable sources [covering the basics](#) and [countering false and dangerous misinformation](#). To date, the COVID-19 vaccine has been widely available in the U.S. for so long that those who are not yet vaccinated may hold strong concerns about the vaccine's safety, or other fears. Holding a Q & A session with a physician or other trusted person may help put people at ease if they can have their personal questions and concerns addressed.
 - Facilitate positive storytelling about vaccination. Ask for volunteers who are vaccinated to share their story with their co-workers, either in peer-led group sessions, or in a company newsletter. Consider offering prompts such as, "What have you been able to do now that you couldn't before you got vaccinated."
 - Protect the workforce from the increased risk of working among unvaccinated co-workers. For workers who refuse vaccinations, implement safeguards such as requiring proof of a negative COVID-19 test weekly, screening for fever or other symptoms at the beginning of each workday, and as you remove or relax control measures, such as social distancing or masking, keep the requirements in place for individuals who don't provide proof of vaccination status.
- 2) Encourage workers to receive boosters when they are eligible, six months after completing an initial series of a two-dose Pfizer-BioNTech or Moderna vaccine, or two months after receiving the one-dose Johnson & Johnson vaccine. Workers should also be encouraged to receive the updated (bivalent) booster if it's been at least two months since their last COVID-19 vaccine dose, whether that was their final primary series dose or an original (monovalent) booster.
 - Why? [Studies show after getting vaccinated against COVID-19, protection against the virus and the ability to prevent infection with variants may decrease over time](#). The level of immunity following a completed primary dose of a two-dose vaccine has been found to [decrease by 57% at six months](#) post vaccination, highlighting the need for individuals to receive booster shots as soon as it is recommended for them. Here are some actions employers may want to consider to encourage booster uptake:
 - Send reminders to the workforce of when vaccinated people become eligible for their booster. You could include a notice such as, "If you received your second dose of a two-dose shot before [date], you are eligible today to receive a booster shot." Or point

them to an [online calculator](#) where they can type in the date of their most recent vaccination and be told the date they are eligible for a booster.

- Offer the same incentives, if any, you offered for the primary series of shots, such as paid time off for vaccination appointments or recovery, assistance with scheduling and traveling to booster vaccine appointments, or a cash bonus or gift card.
- Distribute information about boosters, and why they are especially important to help protect against the spread of new variants. Be sure to distribute information in all [languages](#) primarily spoken by workers if your workforce includes low proficiency English speakers.
- If you have implemented a vaccine requirement, include the requirement that workers receive boosters when recommended to maintain their immunity.

3) Encourage workers to vaccinate their children.

- Why? Children are more at risk of [catching and spreading](#) the virus causing COVID-19 than was previously suggested by data earlier on in the pandemic. Children had lower rates of exposure when in-person schooling, daycares and kids' activities were shut down. Additionally, children who become infected are likely to show mild or no symptoms, and infections can easily go undetected. This suggests the initial observation of lower case rates among young children could have been due, in large part, to lower rates of exposure, and less frequent testing resulting in underreporting. As children re-enter in-person learning and social environments, their risk of exposure increases. An infected child can spread the virus to members of their household before anyone realizes the child has COVID-19. Encouraging workers to get their children vaccinated protects not only the child, but the worker, their family and your workforce. Here are some actions to consider to encourage workers to get their children vaccinated:
 - Provide [information](#) on the safety and efficacy of vaccines for children, and answers to common questions parents might have.
 - Provide information to dispel [concerns](#) parents may have, especially fears prompted by misinformation.
 - Host an onsite vaccine clinic and encourage workers to bring their families.
 - Provide PTO for parents to bring their children to vaccine appointments.

4) Continue to encourage masking indoors regardless of vaccination status.

- Why? [Vaccines are not 100% effective at preventing infection](#). Some people who are fully vaccinated will still get COVID-19, but often [show milder symptoms](#), or may be asymptomatic entirely. People who get vaccine breakthrough infections can be [contagious](#), but are less likely than unvaccinated people to be hospitalized or die. The [CDC recommends](#) people follow prevention strategies like wearing a mask in public indoor settings in areas of substantial or high community transmission. The CDC recently updated its mask guidance by recommending N95 or KN95 masks as they offer the best protection against COVID-19. Here are some suggestions for encouraging or requiring use of masks in the workplace:

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- Provide masks – N95 or KN95 when possible – for workers during business travel or when they are coming into a physical office setting. Make sure they are high quality, effective and able to be adjusted for a comfortable fit without significant gaps between the edge of the mask and the skin.
- Help make mask wearing as comfortable as possible. Fogged glasses, irritation of the ears, and the feeling of material touching the face and mouth can range from a minor nuisance to extremely irritating and distracting for some by the end of a work day. Provide tips on making masks [more comfortable](#), and offer regular outdoor “mask breaks,” weather-permitting. Offer tools and products such as accessories that hold mask loops off the ears, mask inserts that keep mask material from touching the mouth or lens treatments that help keep glasses from fogging.