



# COVID-19 Risk “Calibration” Planning Toolkit

As more transmissible variants of COVID-19 spread in the United States, a stepwise strategy for “calibrating” risk mitigation strategies are needed as regional case rates fluctuate and workplaces needed to adjust policies to match community case rates and workplace vaccination rates.

## Variants of Concern (VOC)

**The increased transmissibility associated with the Delta variant increases the risk of workplace transmission in a mixed vaccination workforce. This Toolkit has been updated (July 30, 2021) to address the rapid emergence of the Delta variant and help companies consider what controls to implement based on community case rates and workplace vaccination rates.**

**Emerging data from the US CDC is very concerning relating to the Delta variant:**

- 1. The basic reproductive number (R0) of the Delta variant may be as high as 9.5 and compares to an R0 of 2.5 to 3 for the original SARS-CoV-2 strain. In lay terms, this means an infected person could infect 9 to 10 other people.**
- 2. Fully vaccinated people can transmit the Delta variant. Fully vaccinated people can still produce a significant amount of virus in their nose and throat and transmit to other vaccinated and unvaccinated people.**
- 3. In a large outbreak in Massachusetts in early July 2021, at least 70 percent of the more than 900 cases of COVID were fully vaccinated. This outbreak clearly shows that there may be significant breakthrough infections of the Delta variant in fully vaccinated people<sup>1</sup>.**
- 4. Hospitalization rates remain very low in fully vaccinated people infected with the Delta variant.**

The following document and Toolkit summarize TAG’s current recommendations to its clients based on guidance from the WHO, ECDC, OSHA, and CDC. It is broadly targeted at, but not limited to, the foodservice and food manufacturing and supporting industries, covering various topics. These recommendations are designed to keep workers safe and healthy while reducing the risk of illness. This document is not intended to provide legal advice; it provides recommendations based on current scientific and public health recommendations and rationale. The user should consult with legal counsel familiar with the laws in the jurisdiction where the facility or facilities in question are located.

This document will continue to be updated as the science regarding SARS-CoV-2 transmission, and vaccine efficacy continues to evolve.

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<sup>1</sup> Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, Massachusetts, July 2021. MMWR Morb Mortal Wkly Rep. ePub: 30 July 2021. DOI: [http://dx.doi.org/10.15585/mmwr.mm7031e2external\\_icon](http://dx.doi.org/10.15585/mmwr.mm7031e2external_icon)

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## I. Framework for managing a mixed-vaccination workforce

Vaccines are a powerful tool in helping to end the COVID-19 pandemic and can ensure that there will be a reduced risk of infection in your employees. Current scientific thinking estimates that about 75% - 85% of the world's population will need to be vaccinated to bring the pandemic to an end. However, this will take several years to complete. **Currently, in the U.S., anyone over the age of 12 can be vaccinated; vaccines are also widely available.** As an employer, your employees will be safer when they and a significant majority. Because the transmissibility of the Delta variant is higher than the previous strain, a vaccination rate of 85% or higher in your workforce will provide more protection.

The emergence of Variants of Concern (VOCs) suggests that some new and emerging VOCs may reduce a vaccine's efficacy against symptomatic illness. While some vaccines may have lower efficacy rates for these VOCs, all currently available vaccines in the United States are still highly effective at preventing severe disease (necessitating hospitalization or more) and mortality.

### Asking an employee about their vaccination status

Current guidance from the U.S. Equal Employment Opportunity Commission (EEOC) states that employers may ask employees about their vaccination status<sup>2</sup>:

When an employer asks employees whether they obtained a COVID-19 vaccine from a third party in the community, such as a pharmacy, personal health care provider, or public clinic, the employer is not asking a question that is likely to disclose the existence of a disability; there are many reasons an employee may not show documentation or other confirmation of vaccination in the community besides having a disability. Therefore, requesting documentation or other confirmation of vaccination by a third party in the community is not a disability-related inquiry under the ADA, and the ADA's rules about such inquiries do not apply.

However, documentation or other confirmation of vaccination provided by the employee to the employer is medical information about the employee and must be kept confidential.

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<sup>2</sup> <https://www.eeoc.gov/wysk/what-you-should-know-about-covid-19-and-ada-rehabilitation-act-and-other-eeo-laws>  
[www.AchesonGroup.com](http://www.AchesonGroup.com) [info@AchesonGroup.com](mailto:info@AchesonGroup.com) 800.401.2239

## II. Calibrating Risk Control Measures based on Vaccination, Case, and Test Positivity Rates

As case and positivity rates fluctuate nationally, the table below describes the “Levels” of risk reduction measures dependent on current outbreak variables (case and test positivity rates) and **workforce** vaccination rates. The case-rate and test-positivity thresholds are lower than they would be for a largely susceptible population because we expect to see case rates decrease as vaccination rates increase. This results in an updated definition of what represents community spread based on case rates. For example, high community spread levels in a susceptible population were characterized by daily case rates of 14-25 cases per 100,000 people. However, in an increasingly vaccinated population, high community spread levels could be redefined as ten or more ( $\geq 14$ ) cases per 100,000 people because fewer people are susceptible to infection.

The primary measures of interest are case rate and vaccination rate. However, the test-positive rate is informative for indicating if there is adequate testing capacity in a jurisdiction. Test-positive rates greater than 10% suggest that the case rate is likely an underestimate of the true incidence of infection in the population.

	Percentage of Employees Fully Vaccinated		
		Mixed Vaccinated Workforce (<85% Fully Vaccinated)	Highly Vaccinated Workforce (>85% Fully Vaccinated)
<b>Average Daily Community (City, County, State) Case Rate and Test Positive Rate (for at least one week as rates are rising and at least two weeks as rates are declining)</b>	<b>High</b> ( $\geq 14$ cases per 100K or $\geq 10\%$ test positive rate)	Level 4 - Masking for all employees and other control measures	Level 3 - Masking for all employees and other control measures
	<b>Substantial</b> (8-14 cases per 100K or $\geq 8\%$ test positive rate)	Level 3 - Masking for all employees and other control measures	Level 2 - Masking for all employees
	<b>Moderate</b> ( $< 8$ cases per 100K and/or $< 8\%$ test positive rate)	Level 2 - Masking for all employees	Level 1 - Masking for all employees until more information on the Delta variant is available

## Levels of Risk Mitigation “Calibration”

All Levels of risk mitigation “calibration” or reduction must be done in compliance with state and local requirements. Risk mitigation measures required by public health authorities should not be changed or removed unless or until allowed in the applicable jurisdiction. State and local requirements should always take precedence when dialing back risk mitigation measures.

Level 4- High Risk of Transmission - community case rates are sufficiently high to increase the risk of workplace transmission

- Masking of all employees (vaccinated and unvaccinated is recommended)
- Maintain all current risk mitigation programs. These typically include but are not limited to (see OSHA guidance measures below as well):
  - Workplace de-densification with staggered shifts and telecommuting
  - Physical distancing
  - Mask usage
  - Employee illness monitoring and surveillance
  - Improved ventilation and air purification
  - Employee testing programs
  - Limiting access to non-essential areas such as gyms, etc.
- Fully vaccinated employees do not need to quarantine if they are close contacts of a known or suspected COVID-19 case. However, if employees experience symptoms, they should quarantine until they are tested using an antigen or PCR test. Fully-vaccinated employees should continue to follow all other risk mitigation requirements at work.

Level 3 - Substantial Risk of Workplace Transmission

- Masking of all employees (vaccinated and unvaccinated is recommended)
- Relaxing of other Level 4 risk control measures can be considered

Level 2 - Moderate Risk of Workplace Transmission for Vaccinated Employees

- Masking of all employees (vaccinated and unvaccinated is recommended)

Level 1 - Easing temporary ventilation, physical distancing, and face coverings

- Masking of all employees (vaccinated and unvaccinated is recommended) until more information on the Delta variant and transmission by fully vaccinated people is known
- Removal of temporary ventilation/air purification modifications
  - Natural ventilation, portable HEPA units, etc.
- Continue employee illness monitoring - no symptomatic employees allowed on site without prior approval (allergies, symptoms that are side effects of medications, etc.)
- Improvements made to ventilation and air handling/treatment systems
- Continue hybrid work models to accommodate for absenteeism due to school or daycare closures

## Workplace testing

Because the Delta variant can cause illness in both vaccinated and unvaccinated people, several relevant testing use-cases can be considered:

- ❑ **Randomized surveillance testing:** randomly testing employees (both vaccinated and unvaccinated, depending on vaccination rates) regularly
- ❑ **Targeted testing:** Testing employees that cannot regularly physically distance or have higher-risk interactions
- ❑ **Assurance testing:** Testing all employees regularly (until at least 85% of employees are vaccinated)
  - Once 85% of employees (or a community) are vaccinated, only unvaccinated employees could be tested to monitor for asymptomatic or presymptomatic infections in the workforce.
- ❑ **Close-contact testing:** Testing of vaccinated employees who have been exposed to a confirmed case of COVID-19. Fully vaccinated persons do not need to quarantine and should be tested 3-5 days after their last exposure.

The frequency of testing can be determined based on the testing platform.

## An ongoing hierarchy of controls based on OSHA's updated COVID-19 guidance

As cases decrease and the CDC, state, and local jurisdictions relax control measures, the United States is entering a new post-pandemic "normal." With less than 60% of the population fully vaccinated, COVID-19 will remain in circulation in the U.S. for the foreseeable future. On June 10, 2021, the Department of Labor and the Occupational Safety and Health Administration (OSHA) published updated guidance for workers and employers on mitigating and preventing the spread of COVID-19 in the workplace<sup>3</sup>.

### Hierarchy of Workplace Health Controls for Respiratory Illnesses including COVID-19

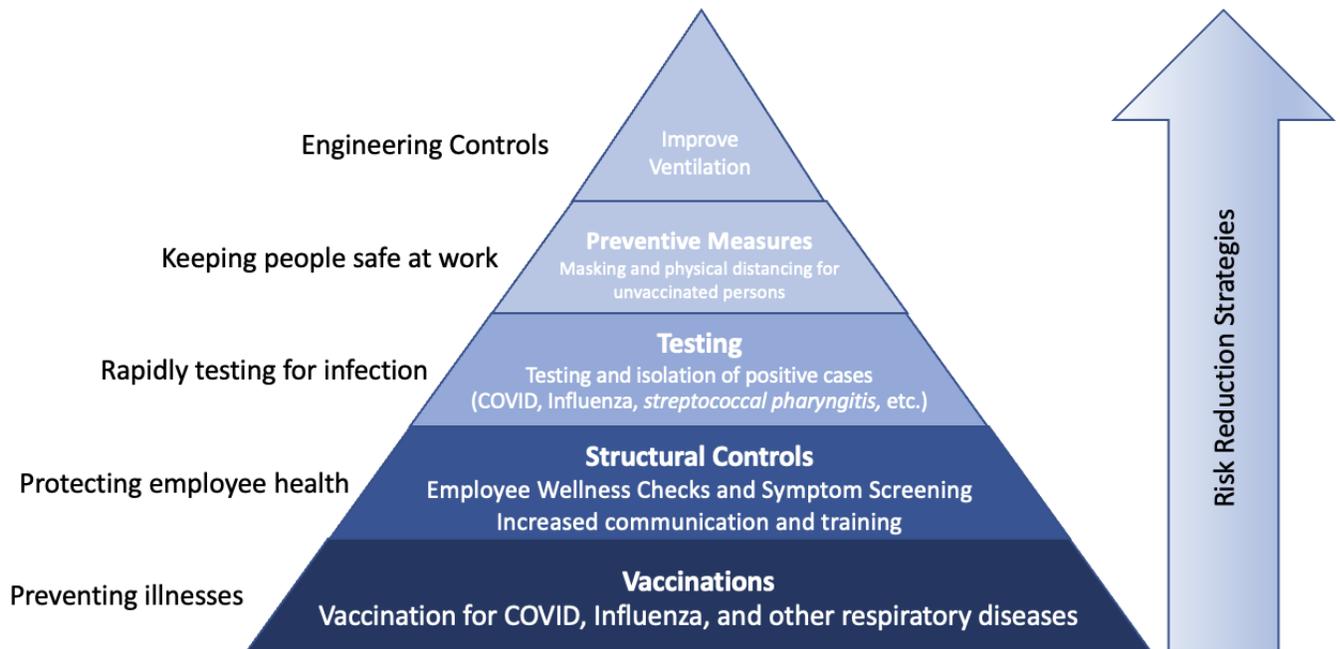


Figure 1. Hierarchy of Controls for COVID-19 and other respiratory illnesses in the Post-Pandemic "New Normal" based on OSHA Guidance

This approach considers the following:

1. Vaccination for COVID, influenza, and other respiratory diseases: The greater proportion of the population that is vaccinated, the lower the risk of transmission and illness in that population. Ongoing vaccination campaigns can reduce the likelihood of symptomatic illnesses, leading therefore to a decreased need for testing and isolation.
2. Screening for respiratory symptoms:
  - People who are actively symptomatic with COVID-like symptoms should be screened and sent for testing.
  - People who are actively symptomatic should **not** be in public or in the workplace until they are tested, and a definitive diagnosis can be made.
  - If someone tests positive for COVID-19, **unvaccinated close-contacts** should quarantine per CDC guidance<sup>4</sup>.
3. Testing and isolation of positive cases: people testing positive for COVID-19 and other respiratory illnesses should isolate until their symptoms resolve and they are no longer infectious.

<sup>3</sup> <https://www.osha.gov/coronavirus/safework>

<sup>4</sup> <https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html>

4. Masking: per OSHA guidance, unvaccinated workers should **continue** to mask and physically distance (remain at least 6-feet apart) whenever possible.
5. Ventilation: ongoing capital investments in ventilation and air handling systems can further reduce the risk of communicable (infectious) disease transmission in indoor spaces.

## Managing Mixed-Vaccination Status Workers

A new COVID-19 worker protection publication issued by OSHA on June 10, 2021, provides further guidance on [Mitigating and Preventing the Spread of COVID-19 in the Workplace](#). In the guidance's Appendix, OSHA addresses [Measures Appropriate for Higher-Risk Workplaces with Mixed-Vaccination Status Workers](#). These measures apply to all higher-risk workplaces, including "manufacturing, meat and poultry processing, high-volume retail and grocery, and seafood processing," **focusing on where there are any unvaccinated** or otherwise at-risk workers.

OSHA has issued the publication as guidance, and the measures are not technically requirements. The guidance calls for businesses to differentiate between vaccinated and unvaccinated employees. However, a lack of implementation may put a business at risk of legal liability should an outbreak or work-related transmission occur in a facility.

## OSHA Measures Appropriate for Higher-Risk Workplaces with Mixed-Vaccination Status Workers

OSHA has provided specific guidance to "higher-risk" workplaces which include food manufacturing, groceries, and restaurants. According to OSHA:

In these types of higher-risk workplaces - which include manufacturing, meat and poultry processing, high-volume retail and grocery, and seafood processing - this Appendix provides best practices to protect unvaccinated or otherwise at-risk workers. Please note that these recommendations are *in addition to* those in the general precautions described above, including isolation of infected or possibly infected workers and other precautions.

In all higher-risk workplaces where there are unvaccinated or otherwise at-risk workers:

- Stagger break times in these generally high-population workplaces, or provide temporary break areas and restrooms to avoid groups of unvaccinated or otherwise at-risk workers congregating during breaks. Unvaccinated or otherwise at-risk workers should maintain at least 6 feet of distance from others at all times, including on breaks.
- Stagger workers' arrival and departure times to avoid congregations of unvaccinated or otherwise at-risk in parking areas, locker rooms, and near time clocks.
- Provide visual cues (e.g., floor markings, signs) as a reminder to maintain physical distancing.
- Implement strategies (tailored to your workplace) to improve ventilation that protects workers as outlined in [CDC's Ventilation in Buildings](#) and in the [OSHA Alert: COVID-19 Guidance on Ventilation in the Workplace](#).

In workplaces (or well-defined work areas) with processing or assembly lines where there are unvaccinated or otherwise at-risk workers:

- Working on food processing or assembly lines can result in virus exposure because these workplaces have often been designed for a number of workers to stand next to or across from each other to maximize productivity. Proper spacing of unvaccinated or otherwise at-risk

workers (or, if not possible, appropriate use of barriers) can help reduce the risks for such workers.

In retail workplaces (or well-defined work areas within retail) where there are unvaccinated or otherwise at-risk workers:

- Suggest masks for unvaccinated (or unknown-status) customers and other visitors.
- Consider means for physical distancing from other people who are not known to be fully vaccinated. If distancing is not possible, consider the use of barriers between work stations used by unvaccinated or otherwise at-risk workers and the locations customers will stand, with pass-through openings at the bottom, if possible.
- Move the electronic payment terminal/credit card reader farther away from any unvaccinated or otherwise at-risk workers in order to increase the distance between customers and such workers, if possible.
- Shift primary stocking activities of unvaccinated or otherwise at-risk workers to off-peak or after hours when possible to reduce contact between unvaccinated or otherwise at-risk workers and customers.

Unvaccinated and otherwise at-risk workers are also at risk when traveling to and from work in employer-provided buses and vans.

- Notify unvaccinated and otherwise at-risk workers of this risk and, to the extent feasible, help them limit the number of such workers in one vehicle.
- Make sure all unvaccinated and otherwise at-risk workers sharing a vehicle are wearing appropriate face coverings.

### III. Ventilation

As of May 7, 2021, the CDC has updated its reflection of the “current knowledge about [modes of] SARS-CoV-2 transmission” to be characterized through the “inhalation of the virus,” making SARS-CoV-2 an airborne virus. Transmission occurs through exposure to “infectious respiratory fluids.” Ultimately, the CDC declares there are three principal ways of transmission:

1. inhalation of very fine respiratory droplets and aerosol particles;
2. deposition of respiratory droplets and particles on exposed mucous membranes in the mouth, nose, or eye by direct splashes and sprays; and
3. touching mucous membranes with hands that have been soiled either directly by virus-containing respiratory fluids or indirectly by touching surfaces with the virus on them.

Additionally, previously discussed, COVID-19 infection risk varies by the number of viral particles a person is exposed to, which can be influenced by multiple factors (including humidity, sunlight, temperature, the mass of particles, volume of particles, etc.). However, the CDC also highlights that it is possible to transmit (and become infected) the virus “in the air farther than six feet” away from the infectious source.

As has been discussed in TAG’s COVID Toolkit, factors that can increase the risk of infection include:

- Being in an enclosed space without adequate ventilation or air handling since aerosolized particles can build up in the air space.

- Increased inhalation of respiratory fluids if a person is engaged in an activity requiring exertion or louder voice (projecting of the rate or speed of particles like through coughing, sneezing, speaking, sneezing)
- Being exposed for a longer period of time ( $t > 15$  minutes).

A recent research study, published in the *Proceedings of the National Academy of Sciences of the United States of America*, title "[A guideline to limit indoor airborne transmission of COVID-19](#)," provides a model for understanding and measuring the risk of transmission and what can be done to decrease risk indoors.

The researchers postulate that an infectious dose of SARS-CoV-2 is about ten aerosol-borne virions. Overall findings reveal that the risk of transmission can be reduced in large rooms with high air exchange. However, the use of air filtration was still not as important of a factor as wearing a face mask. The use of face coverings (and face masks) can continue to reduce the risk of transmission dramatically; however, activities (in a room) that do involve increased respiratory activities (loud talking, physical activity, etc.) can also increase the risk of transmission. The researchers illustrate their findings to (a) estimate maximum occupancy and (b) exposure time in two scenarios/case studies, assuming that those within the room are "engaged in relatively mild respiratory activities like quiet speech or rest."

In a situation in which there are about 20 individuals who may be interacting with one another in a singular space (and at "resting respiration"), the "safe time after an infection individual enters the room (for normal occupancy and without masks/face-coverings) is 1.2 hours for natural ventilation and 7.2 hours with mechanical ventilation". However, if a mask is used, the safe time increases to 8 hours and 80 hours, respectively. In such a situation, even with a 'normal' 6-hour day, as long as masks are worn and adequate ventilation is used, transmission would be decreased. If higher respiratory activities are done, the "safe" time limit will decrease.

OSHA also shares these resources on improving indoor air ventilation:

The virus that causes COVID-19 spreads between people more readily indoors than outdoors. Improving ventilation is a key engineering control that can be used as part of a layered strategy to reduce the concentration of viral particles in indoor air and the risk of virus transmission to unvaccinated workers in particular. Some measures to improve ventilation are discussed in [CDC's Ventilation in Buildings](#) and in the [OSHA Alert: COVID-19 Guidance on Ventilation in the Workplace](#). These recommendations are based on ASHRAE [Guidance for Building Operations During the COVID-19 Pandemic](#). Adequate ventilation will protect all people in a closed space. Key measures include ensuring the HVAC system(s) is operating in accordance with the manufacturer's instructions and design specifications, conducting all regularly scheduled inspections and maintenance procedures, maximizing the amount of outside air supplied, installing air filters with a [Minimum Efficiency Reporting Value \(MERV\) 13](#) or higher where feasible, maximizing natural ventilation in buildings without HVAC systems by opening windows or doors, when conditions allow (if that does not pose a safety risk), and considering the use of portable air cleaners with High-Efficiency Particulate Air (HEPA) filters in spaces with high occupancy or limited ventilation.