






Coronavirus Disease 2019 (COVID-19)

Testing Strategy for Coronavirus (COVID-19) in High-Density Critical Infrastructure Workplaces after a COVID-19 Case Is Identified

Workers in [critical infrastructure sectors](#) may be permitted to work if [asymptomatic after potential exposure to a confirmed case of coronavirus disease 2019 \(COVID-19\)](#), provided that worker infection prevention recommendations and controls are implemented. Outbreaks of illness among workers in food-producing facilities and surrounding communities have raised unique questions that identified the need for testing for COVID-19 to supplement existing guidance. This document presents different testing strategy options for exposed co-workers when public health organizations and employers determine testing is needed to help support existing disease control measures. Such strategies can aid in identifying infectious individuals with the goal of reducing transmission of SARS-CoV-2 in the workplace. These strategies augment and do not replace existing guidance.

SARS-CoV-2, the virus that causes COVID-19, is primarily spread from person to person through respiratory droplets. Workers in high-density settings in which workers are in the workplace for long time periods (e.g., for 8-12 hours per shift), and have prolonged close contact (within 6 feet for 15 minutes or more) with coworkers may be at increased risk for exposure to SARS-CoV-2. A close contact is defined in existing [Public Health Recommendations for Community-Related Exposure](#). Other distinctive factors that may increase risk for transmission among these workers include: sharing transportation such as ride-share vans or shuttle vehicles, car-pools, and public transportation; frequent contact with fellow workers in community settings in areas where there is ongoing community transmission; and shared or congregate housing such as dormitories. Workers include, but are not limited to, all employees, contractors, and others who perform work at the facility or worksite. Early experience from COVID-19 outbreaks in a variety of settings suggests that when symptomatic workers with COVID-19 are identified, there are often asymptomatic or pre-symptomatic workers with SARS-CoV-2 present at the workplace. Testing is important to identify such individuals, as they may not know they are infected. SARS-CoV-2 transmission from asymptomatic or pre-symptomatic persons can result in additional cases and potentially outbreaks of COVID-19. Implementing screening for symptoms of COVID-19, testing, and [contact tracing](#)  may be used to detect infected workers earlier and exclude them from the workplace, thus preventing disease transmission and subsequent outbreaks.[1-3]

Critical infrastructure employers have an obligation to manage the continuation of work in a way that best protects the health of their workers and the general public. Appropriate workplace protections, such as engineering and administrative controls, for those present in the workplace should remain in place. Examples of these controls can be found in existing guidance for [Meat and Poultry Processing Workers and Employers](#), and for [Manufacturing Workers and Employers](#) and [other critical infrastructure guidance](#)  . Screening¹ workers and others entering the workplace for symptoms of COVID-19 and body temperature is a critical component of preventing transmission and protecting workers. Workplaces should review and follow existing [guidance](#). Workers who are symptomatic upon arrival at work, or who become sick during the day, should immediately be separated from others. They should be sent to their home or a health care facility, as appropriate, and referred for further evaluation and testing in consultation with the state, territorial, or local health departments or through occupational health providers.




After a COVID-19 case is identified, testing strategies of exposed co-workers may be considered to help prevent disease spread, to identify the scope and magnitude of SARS-CoV-2 infection, and to inform additional prevention and control efforts that might be needed.

Viral (nucleic acid or antigen) testing should be used to diagnose acute infection.

Two kinds of tests are available for COVID-19: (1) [viral tests](#) to detect current infections, and (2) [antibody tests](#) to identify previous infections. CDC provides an [overview](#) of categories of people for SARS-CoV-2 testing with viral tests (i.e., nucleic acid or antigen tests). Viral testing can be used to inform actions necessary to keep SARS-CoV-2 out of the workplace, detect COVID-19 cases quickly, and stop transmission. Testing practices should aim for rapid turnaround times in order to facilitate effective action. Viral testing detects infection at the time the sample is collected; very early infection at the time of sample collection or exposure (e.g., workplace or community) after sample collection can result in undetected infection. Testing at different points in time, also referred to as serial testing, may be more likely to detect acute infection among workers with repeat exposures than testing done at a single point in time.

At the current time, [antibody test](#) results should not be used to diagnose someone with an active SARS-CoV-2 infection. Refer to the CDC website for additional information regarding [testing for COVID-19](#) and [specimen collection](#).

Considerations for use of a testing strategy for COVID-19 infection:

1. A testing strategy should only be implemented if results will lead to specific actions.
 - When a confirmed case of COVID-19 is identified, interviewing and testing potentially exposed co-workers should occur as soon as possible to reduce the risk of further workplace transmission.
2. A comprehensive approach to reducing transmission is recommended. Positive test results indicate the need for exclusion from work and [isolation at home](#).
 - When workers are [living in close quarters](#), such as people who share a small apartment, or people who live in the same household with large or extended families with ongoing risk of close contact exposures to COVID-19, alternative housing may be considered.
 - Decisions about whether workers with COVID-19 should be directed to alternate housing sites should be made in coordination with local or state public health authorities. [Discontinuation of isolation](#) for persons with COVID-19 and work exclusions may follow either a [symptom-based strategy](#) or test-based strategy in consultation with a healthcare provider.
3. A risk-based approach to testing co-workers of a person with confirmed COVID-19 may be applied. Such an approach should take into consideration the likelihood of exposure, which is affected by the characteristics of the workplace and the results of contact investigations (see [Figure](#) ). Examining facility and operations work records, conducting walk-throughs, and employee interviews may aid in categorizing co-workers into the three tiers of testing priority. Prioritization should be done quickly so that testing of co-workers is not delayed. Additionally, if ongoing screening for symptomatic workers or contact tracing identifies additional workers who test positive, the algorithm outlined below should be applied to their [contacts](#)  .
 - Tier 1 is the highest priority for testing of exposed co-workers. Because individuals with COVID-19 may be infectious prior to symptom onset [2,4], contact tracing and baseline testing should include co-workers who were exposed to a worker with confirmed COVID-19, beginning 2 days before the individual with COVID-19 became symptomatic (or, for asymptomatic workers, 2 days prior to specimen collection) until the time of isolation. Exposure includes:
 1. Those who are identified as close contacts through case investigation and [contact tracing](#)  evaluating proximity and length of contact of co-workers with the individual with COVID-19. If the decision is made to test all co-workers in the same area on the same shift, then contact tracing can just focus on other

potential close contacts, for example those who specifically mention eating lunch together, coworkers who carpool, or reside in the same home.

2. Co-workers who work during the same shift or overlapping shifts, in the same area, for example on the same line and same room, as one or more of the workers with COVID-19 based on the employer's assessment of risk in the workplace, such as the layout and size of the room, the design and implementation of engineering controls, adherence to administrative controls², and movement of workers within the area.
 - Tier 2 is the next highest priority tier for testing. Tier 2 includes workers on the same shift, but in a different area of the facility or operation who may have had an exposure to a worker with confirmed COVID-19. Testing may be extended to workers in Tier 2 based on results from contact tracing or based on the employer's assessment of risk in the workplace. If additional COVID-19 cases are identified, then reassessment of the tier and testing would be indicated. Some facilities and workplaces may simultaneously implement Tier 1 and Tier 2 testing. This would include testing all exposed workers on the same shift as the worker(s) with confirmed COVID-19, regardless of area of the facility.
 - Tier 3 includes workers not in Tiers 1 or 2. Tier 3 includes workers who shared a common space (e.g. a rest room, break room) and therefore exposure to worker(s) with confirmed COVID-19 cannot be definitively ruled out. Tier 3 also includes workers who generally work a different shift than the worker(s) with confirmed COVID-19 but exposure cannot be excluded based on the potential for overlap in work time from back-to-back shifts. Testing may be extended to workers in Tier 3 based on contact tracing or on the employer's concern about overall risk of COVID-19 in the workplace. Some facilities and workplaces may elect to include testing of co-workers in Tier 3 from the outset. For example, high rates of COVID-19 transmission in the surrounding community may prompt employers to test more broadly. Note that if test results from Tier 1 or Tier 2 testing indicate infection among workers in multiple areas of the facility, including some cases among workers who worked on multiple shifts, then testing may need to be expanded accordingly.
4. Implementation of testing strategies can supplement measures to reduce transmission in the workplace, [provided other protections](#) are in place to protect worker health while keeping the workplace open. If employers elect to conduct facility-wide testing, multiple asymptomatic workers with SARS-CoV-2 infection may be identified. Employers should have a plan for meeting staffing needs while these persons are out of the workplace [per COVID-19 Critical Infrastructure Sector Response Planning](#). Of note, [CDC's critical infrastructure guidance](#) provides exceptions to current home quarantine practices after an exposure to COVID-19. Current guidance advises that employers may permit workers who have had an exposure to COVID-19, but who do not have symptoms, to continue to work, provided they adhere to additional safety precautions, such as measuring the employee's temperature and assessing for symptoms of COVID-19 before each work shift ("pre-screening"), asking the employee to self-monitor for symptoms during their work shift, and asking the employee to wear a cloth face covering while they are in the workplace. A testing strategy should enhance existing disease prevention measures by augmenting ability to detect infection among asymptomatic or pre-symptomatic workers. For all these strategies, waiting for test results prior to returning to work is preferred to keep infected workers out of the workplace.
 - **Workers in Tier 1**, who have close contact with or exposure to a co-worker with confirmed COVID-19 should be tested and quarantined as soon as possible to reduce the risk of further workplace transmission. Workers should follow existing [guidance](#) regarding self-monitoring by checking their temperature twice daily and watching for symptoms. Strategies with differing levels of risk of workplace transmission may be considered for exposed but asymptomatic critical infrastructure workers in Tier 1 to return to work with appropriate workplace protections. Strategies involving serial testing (e.g., testing at baseline and Day 3 vs. testing only at baseline) are more likely to identify infected workers than testing at a single point in time. In selecting a strategy, employers should consider which strategy appropriately balances maintaining operations with worker safety. Strategy 3 should only be considered during critical staffing shortages.
 - Strategy 1: The strategy is for exposed workers in Tier 1 to follow existing recommendations regarding exclusion from work. These workers are excluded from work and quarantined for 14 days, based upon the incubation period, even if their baseline test results are negative. This strategy reliably excludes workers

who are exposed and may become infected, limiting infection of others in the workplace.


- Strategy 2: The strategy is a test-based option for returning to work earlier than 14 days after an exposure for workers in Tier 1. This includes baseline testing and serial testing (i.e. re-testing) every 3 days until there are no more new cases detected in the Tier 1 cohort. Individual workers in Tier 1 who remain asymptomatic and have negative tests at baseline and Day 3 can return to work and should continue to be tested every 3 days after returning to work until there are no more new cases in the worker cohort. With this strategy some workers who are infected and return to work may begin to shed virus after Day 3. Infection in these workers could be missed without serial testing resulting in potential workplace transmission. Workers who test positive or become symptomatic during quarantine or after returning from work should be excluded from the workplace, as discussed above.
 - Strategy 3: During critical staffing shortages, another strategy to facilitate early return to work is to allow asymptomatic workers in Tier 1 to return to work after a baseline test is obtained. Under this strategy, it is recommended that return to work would follow a negative test result, but could occur while results were pending, provided other [protections](#) are in place. In this case, this worker cohort should continue to be tested every 3 days after returning to work until there are no more new cases. Workers who test positive or become symptomatic should be excluded from the workplace, as discussed above.
 - **Workers in Tier 2 and Tier 3:** Screening for symptoms should continue for workers in Tiers 2 and 3. Baseline testing may be considered for these workers based on the employer's assessment of exposure risk in the workplace or a positive symptom screen. They can continue to work provided they remain asymptomatic and, if tested, their test is negative.
5. Which organizations perform the testing may vary among jurisdictions and may include the public health department, an employee health clinic, a healthcare provider engaged by the employer, or local health care facilities.
- Symptom screening, testing, and contact tracing must be carried out in a way that protects confidentiality and privacy, to the extent possible, and is consistent with applicable laws and regulations. To prevent stigma and discrimination in the workplace, make employee health screenings as private as possible. Follow guidance from the [Equal Employment Opportunity Commission](#) [↗](#) regarding confidentiality of medical records from health checks.
- Symptom screening upon entry to the workplace should be designed so that the screening process is conducted in as private a manner as possible, without a worker's personal information being overheard or communicated inappropriately at any time. Because OSHA's Access to Employee Exposure and Medical Records standard ([29 CFR § 1910.1020](#) [↗](#)) requires that covered employers retain medical records for the duration of employment plus 30 years, consider the burdens and benefits of documenting individually identifiable results of entry screenings. Healthcare providers that are [covered entities](#) [↗](#) under the Health Insurance Portability and Accountability Act (HIPAA) must abide by HIPAA rules. Due to the "[direct threat](#) [↗](#)" posed by COVID-19 to co-workers, healthcare providers who test workers for COVID-19 as described in this guidance should notify employers of tested workers' fitness for duty, workplace restrictions (e.g., restrictions on ability to enter the worksite, limitation to telework, etc.), and the need for contact tracing of other workers deemed to be in close contact, even if this might allow employers to surmise that employees might have COVID-19. However, providers should not share employees' test results or diagnoses with employers without employees' permission, even though at entry screening, [employers may ask all employees who will be physically entering the workplace if they have COVID-19](#) [↗](#), or symptoms associated with COVID-19, or ask if they have been tested for SARS-CoV-2.
- Providers should report and explain test results to workers and notify the state, territorial, tribal, or local health department of cases in a timely fashion. When employers become aware of cases, the Recording and Reporting Occupational Injuries and Illnesses standard ([29 CFR part 1904](#) [↗](#)), may require certain employers to keep a [record of serious work related injuries and illnesses](#) [↗](#) including [work related COVID-19](#) [↗](#).
 - Contact tracing, whether performed by a health department or a healthcare provider engaged by the employer, should be carried out in a way that protects the confidentiality and privacy of an employee with COVID-19, or a

SARS-CoV-2 positive test, to the degree possible.

6. Ensure that sick leave policies are flexible and consistent with [public health guidance](#) and that employees are aware of and understand these policies. Maintain flexible policies that permit employees to stay home to care for a sick family member or take care of children due to school and childcare closures. Additional flexibilities might include giving advances on future sick leave and allowing employees to donate sick leave to each other. Employers that do not currently offer sick leave to some or all of their employees should consider drafting non-punitive “emergency sick leave” policies.

Footnotes

¹Employers should evaluate the burdens and benefits of recording workers’ temperatures or asking them to complete written questionnaires. These types of written products can become records that must be retained for the duration of the workers’ employment plus 30 years. See OSHA’s Access to Employee Exposure and Medical Records standard (29 CFR § 1910.1020).

²At this time, differential determination of close contact for those using fabric face coverings is not recommended per [CDC guidance](#) .

References

1. Treibel, T.A., et al., COVID-19: PCR screening of asymptomatic health-care workers at London hospital. *The Lancet*, 2020. **395**(10237): p. 1608-1610.
2. Dora, A.V., et al., Universal and Serial Laboratory Testing for SARS-CoV-2 at a Long-Term Care Skilled Nursing Facility for Veterans – Los Angeles, California, 2020. *MMWR Morb Mortal Wkly Rep*, 2020. **69**(21): p. 651-655.
3. Moriarty, L.F., et al., Public Health Responses to COVID-19 Outbreaks on Cruise Ships – Worldwide, February-March 2020. *MMWR Morb Mortal Wkly Rep*, 2020. **69**(12): p. 347-352.
4. He, X., et al., Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med*, 2020.

Note: This document is intended to provide guidance on the appropriate use of testing and does not dictate the determination of payment decisions or insurance coverage of such testing, except as may be otherwise referenced (or prescribed) by another entity or federal or state agency.

Page last reviewed: June 13, 2020

Content source: [National Center for Immunization and Respiratory Diseases \(NCIRD\), Division of Viral Diseases](#)