Utah Department of Health & Human Services

Report immediately

Coronavirus disease 2019 (COVID-19)

Disease plan

Quick links

Last updated: 7/22/2022

Recommendations may change as we learn more about COVID-19 and the best ways to keep our communities safe.

Questions about this disease plan?

Contact the Utah Department of Health and Human Services, Office of Communicable Diseases: 801-538-6191.

Coronavirus disease 2019 critical clinical information

Clinical evidence

Signs/symptoms

- Fever
- Chills
- Rigors (shaking chills)
- Myalgia (muscle aches)
- Headache
- Sore throat
- Nausea/vomiting
- Diarrhea
- Fatigue
- Congestion or runny nose
- Cough
- Shortness of breath
- New loss of smell
- New loss of taste

Period of communicability

- Declines rapidly after 14 days post-exposure

Incubation period

- Range of up to 14 days; median 4-5 days from exposure

Mode of transmission

- Respiratory droplet, aerosolized particles

Laboratory testing

Type of lab test/timing of specimen collection

- Diagnostic: NAAT/PCR
- Screening: antigen testing

Type of specimens

- Blood, serum, viral culture, nasal, nasopharyngeal swab, sputum, BAL, saliva

Treatment recommendations

Type of treatment

- NIH COVID-19 treatment guidelines

Time period to treat

- Early stages of illness

Prophylaxis

- N/A

Vaccines

- Pfizer-BioNTech/COMIRNATY
- Moderna
- Johnson & Johnson/Janssen (only when others are contraindicated)

Contact management

Isolation of case (these may vary in settings such as schools, congregate living, etc.)

- 5 days since the onset of symptoms, or 5 days since the day testedif the individual is asymptomatic. Individuals should wear a mask around others for 10 days after positive test or symptom onset.
- Symptoms have improved for 24 hours.
- Fever-free for 24 hours, without the use of fever-reducing medications.

Quarantine of contacts (these may vary in settings such as schools, congregate living, etc.)

- 5 days after last exposure to a COVID-19 positive individual, wear a mask around others for 10 days after last exposure, and monitor for symptoms for 10 days.
- No quarantine if contact is up-to-date on COVID-19 vaccinations or had a COVID-19 infection in the past 90 days.

Infection control procedures

- Clean surfaces and shared equipment with EPA List N cleaning products.
- Isolate case (consider cohorting with COVID-19 patients or movement to COVID-positive facilities in congregate living settings).
- Quarantine contacts and use PPE in congregate living settings.

Why is COVID-19 important to public health?

In December 2019, a novel coronavirus (COVID-19) was identified in Wuhan, Hubei Province, China. In January 2020, the first U.S. case of novel coronavirus was identified in Washington state. Initial cases in the U.S. were clustered; however by mid-March 2020, multiple cases in areas across the country were being reported with no epidemiologic link to a confirmed case. Widespread community transmission was documented as early as July 2020.

Because this is a new virus, it is assumed no humans had pre-existing immunity. The novel coronavirus quickly spread and is now in countries worldwide, and part of an ongoing pandemic.

Disease and epidemiology

Clinical description

COVID-19 symptoms can be different depending on how severe the disease is , and may include fever, chills, myalgia, headache, sore throat, nausea or vomiting, diarrhea, fatigue, congestion, cough, shortness of breath, new loss of smell, and new loss of taste. Presentation in children is generally mild or asymptomatic, although some children can get very sick. Some people develop multisystem inflammatory syndrome (MIS) after exposure to COVID-19. This is a rare, but serious condition that causes inflammation in various parts of the body, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. This can affect both adults (MIS-A) and children (MIS-C).

Symptoms of COVID-19 are nonspecific and can present in a variety of ways. According to the Council of State and Territorial Epidemiologists, approximately 80% of people evaluated for COVID-19 have mild to moderate symptoms,15% have severe disease requiring supplemental oxygen, and 5% are critical and require mechanical ventilation. It is not uncommon for COVID-19 to have an atypical presentation. Evidence also shows a significant proportion of the population, across all age groups, will remain asymptomatic despite infection. The prevalence of asymptomatic infection is not well understood, as those who don't have symptoms may not be tested. Data suggests asymptomatic infection may be common, which indicates the total number of infections is likely higher than reported.

COVID-19 may also be associated with dermatologic manifestations; however, the frequency of this remains unknown. Clinical presentation varies, but common manifestations reported include maculopapular rash, discolored lesions of fingers and toes, and hives.

COVID-19 infection has also been associated with Post-COVID conditions, which encompasses a range of symptoms that can last weeks or months after initial infection with the COVID-19 virus. Symptoms reported with Post-COVID conditions include fatigue, difficulty concentrating,

headache, loss of smell, loss of taste, dizziness, heart palpitations, chest pain, shortness of breath, cough, joint pain, muscle pain, depression, anxiety, fever, and other symptoms that get worse after physical or mental activities.

Causative agent

Severe acute-respiratory syndrome coronavirus 2 (SARS-CoV-2) is the species name of the virus that causes COVID-19 disease, with the '2' designation to distinguish it from the viral cause of the SARS-CoV-1 2002–2004 outbreak.

SARS-CoV-2 is a single-stranded RNA virus of the Coronaviridae virus family. The RNA is enveloped in a proteinaceous envelope containing visible spike proteins that allow binding and entry into human host cells through angiotensin-converting enzyme-2 (ACE2) membrane protein receptors. Because of the central role the spike proteins play in cell entry, mutations in these proteins are key to identifying new variants of the virus with altered virulence.

Because of its genetic similarity to bat coronaviruses, SARS-CoV-2 is believed to have emerged in bats and moved into the human population. Primary spread of the virus is person-to-person through respiratory droplets and aerosols.

Differential diagnosis

Because SARS-CoV-2 infection can present with a range of symptoms and can mimic many other respiratory diseases and conditions, in the absence of or prior to COVID-19 diagnosis, it is important to rule these out. Therefore, differential diagnosis for SARS-CoV-2 includes ruling out other viral agents of respiratory disease such as influenza, rhinovirus (common cold), and respiratory syncytial virus (RSV), as well as bacterial agents of pneumonia such as Legionella pneumophila, Streptococcus pneumoniae, etc. Additionally, other possible physiological causes for shortness of breath and low oxygen saturation, such as myocardial infarction, sleep apnea, chronic obstructive pulmonary disease (COPD), and cardiovascular disease should also be ruled out.

Laboratory identification

Different types of COVID-19 tests can detect the presence of SARS CoV-2 virus or the body's response to infection. These tests include nucleic acid amplification tests (NAATs) also known as polymerase chain reaction (PCR) tests, antigen tests, and antibody tests. NAATS and antigen tests are the most commonly used tests for diagnostic and screening purposes.

It is important to know the context for tests, as well as how to interpret tests. Diagnostic testing is used to identify current infection in individuals with COVID-19 symptoms and those identified through contact tracing, who were exposed to an individual with confirmed or suspected

COVID-19 disease. Conversely, screening tests are used to identify unknown cases in asymptomatic individuals so measures can be taken to prevent spread. Screening tests include screening for travel purposes; testing employees in workplace settings; testing students and staff in schools; and testing in congregate care settings, including long-term care facilities (LTCF).

See Table I for a comparison of NAAT and antigen testing, and considerations when testing for diagnostic and screening purposes

Nucleic acid amplification tests (NAATs)/PCR testing

NAATs are generally high-complexity, multi-step procedures that require testing by highly-trained laboratory personnel and specialist instrumentation. They rely on amplification of viral nucleic acid, ribonucleic acid (RNA) in this case, by polymerase chain reaction (PCR). These tests are often used as a gold standard to confirm preliminary antigen testing results. Examples of NAATs testing platforms includeTaqPath™ COVID-19 Combo Kit (ThermoFisher), Panther Fusion® SARS-CoV-2 Assay (Hologic®, Inc), and Xpert® Xpress SARS-CoV-2 test (Cepheid®).

NAAT testing involves amplification of the SARS-CoV-2 nucleic acid during a number of cycles. The cycle threshold (Ct) value corresponds to the number of these amplification cycles to yield a positive result. Because a low Ct indicates a high viral load, these values, along with epidemiological information, can be a useful tool to guide the epidemiological response, however Ct values should not be compared across test types.

Antigen testing

Unlike NAATs tests that detect genetic material inside a virus particle, antigen tests detect specific proteins on virus particles. These are relatively simple, low-complexity tests. They are often CLIA-waived and run as point-of-care (POC) testing by personnel with limited training. Test methodology is by immunoassay. Examples of antigen testing platforms include Sofia SARS Antigen FIA (Quidel) and BinaxNOW COVID-19 AG Card (Abbott Diagnostics).

Table I: NAAT and antigen test differences to consider when planning for diagnostic of screening use

	Antigen test	**NAATs**
Intended use	Detect *current* infection	Detect *current* infection*
Analyte detected	Viral antigens	Viral Ribonucleic Acid (RNA)
Specimen type(s)	Nasal, nasopharyngeal	Nasal, nasopharyngeal, oropharyngeal, sputum, saliva
Sensitivity	Varies depending on the course of infection, but generally	Varies by test, but generally high for laboratory-based tests and

	moderate-to-high at times of peak viral load*	moderate-high for POC tests
Specificity	**High	High
Test complexity	Relatively easy to use	Varies by test
Authorized for use at the point-of-care	Most are, some are not	Most are not, some are
Turnaround time	Ranges from 15 minutes to 30 minutes.	Most 1–3 days. Some could be rapid in 15 minutes.
Cost/test	Low (~$5–$50/test)	Moderate (~$75–$100/test)
Advantages	• Short turnaround time (approximately 15 minutes). • When performed at or near POC, this test allows for rapid identification of infected people, thus preventing further virus transmission in the community, workplace, etc. • Comparable performance to NAATs in symptomatic persons and/or if culturable virus present, when the person is presumed to be infectious.	• Most sensitive test method available. • Short turnaround time for NAAT POC tests, but few available. • Usually does not need to be repeated to confirm results.
Disadvantages	• May need confirmatory testing by NAAT/PCR. • Less sensitive (more false negative results) compared to NAATs, especially among asymptomatic people.	• Longer turnaround time for lab-based tests (1-3 days). • Higher cost per test. • A positive NAAT diagnostic test should not be repeated within 90 days, since people may continue to have detectable RNA after risk of transmission has passed.

*The decreased sensitivity of antigen tests might be offset if the point-of-care antigen tests are repeated more frequently (i.e., serial testing at least weekly).

**Some SARS-CoV-2 antigen testing platforms such as Sofia^{R} and Binax NOW^{TM} are not able to differentiate SARS-CoV-2 from SARS-CoV-1.

Antibody testing

Antibody testing is serological testing that utilizes whole blood or serum samples. It is used to detect previous infection with COVID-19. Antibody testing is primarily used for public health surveillance purposes and is not recommended to diagnose current infection, nor should antibody testing be used to determine immunity to COVID-19 disease. Because levels of the early IgM antibody only start to rise two weeks following COVID-19 onset, antibody tests are not effective in the earlier stages of infection. Antibody tests can also be useful in diagnosing certain conditions associated with past COVID-19 infection, such as Multisystem Inflammatory Syndrome in Children (MIS-C).

Viral culture

Viral culture is a complex non-routine test that is performed at limited sites such as the Centers for Disease Control and Prevention (CDC). This test involves growing the SARS-CoV-2 virus in specialized cell lines. Since NAATs cannot distinguish between live and dead viruses, viral culture can be used to determine when people shed live virus. This information has been useful to determine infection timelines and when to discontinue transmission-based precautions.

Representatives from the Utah Department of Health and Human Services Healthcare-associated Infections/Antimicrobial Resistance (HAI/AR) Program can assist in identifying situations for culture, and with coordinating submission. For more information, email hai@utah.gov.

Whole-genome sequencing

Whole-genome sequencing (WGS) is the laboratory method used to determine the genetic sequence of the SARS-CoV-2 virus. Using this technique, the Utah Public Health Laboratory (UPHL) can determine the lineage of a SARS-CoV-2 virus, including lineages that are variants of concern or interest. WGS can be performed on RNA extracted from positive PCR samples. The data generated by WGS can guide decision-making and, along with epidemiology, inform vaccine breakthrough cases or help identify new outbreaks in congregate living settings.

Diagnostic PCR testing is performed at multiple laboratories both in Utah and out-of-state. Unfortunately, samples are often discarded within a few days by the testing laboratories. It is of the utmost importance to have public health follow-up on these samples and ensure clinical laboratories submit them to the UPHL in a timely fashion for sequencing. All PCR positive specimens tested by Intermountain Healthcare, ARUP, and Sports Drug Testing Laboratory are sent to UPHL for WGS. Additionally, UPHL performs WGS on all positive PCR samples tested at UPHL.

Testing algorithm for congregate living settings including long-term care facilities

To guide COVID-19 testing during an outbreak, visit the Long-Term Care Facilities webpage to review the testing algorithm.

COVID-19 laboratory test reporting requirements

COVID-19 is reportable by law, under Utah Code Annotated § 26-6-1 et seq., the Utah Communicable Disease Control Act, and Utah Administrative Code R386-702 Communicable Disease Rule, to the Utah Department of Health and Human Services or the local health department in the health district where the individual lives. This means all COVID-19 test results (positive, negative, inconclusive, and invalid) must be reported to the Utah Department of Health and Human Services (DHHS) by the laboratory or entity performing testing, within 24 hours of the result. Entities performing COVID-19 testing should obtain a CLIA waiver prior to testing.

COVID-19 laboratory testing includes rapid point-of-care (POC) COVID-19 antigen and molecular tests, and laboratory PCR tests.

Treatment

COVID-19 is self-limited in the majority of cases, but for more severe cases, treatment is primarily supportive and may include supplemental oxygen, mechanical ventilation, and intravenous fluids. Treatments specific to COVID-19 have been developed during the course of the pandemic and include monoclonal antibodies and oral antivirals. Each treatment has specific indications for use and contraindications. These COVID-19 specific treatments are primarily aimed to reduce hospitalization and death in moderate to high-risk individuals. Other treatment options include corticosteroids and Remdesivir (IV antiviral). Evusheld is available as a pre-exposure prophylaxis for the immunocompromised.

Current information on therapeutic management of both hospitalized and non-hospitalized adults can be found through the National Institutes of Health.

Case fatality

Based on U.S. epidemiologic data through March 16, 2020, the case fatality ratio (CFR) was highest in people aged 85 years or older (10–27%), followed by people aged 65–84 years (3–11%), aged 55–64 years (1–3%) and was lower in people younger than 55 (<1%).

Reservoir

The reservoir for SARS-CoV-2 has not been identified.

Transmission

SARS-CoV-2 is most easily spread through respiratory fluids. When respiratory droplets are exhaled through talking, coughing, sneezing, exhalation, etc., other individuals can breathe the particles in or get them in their eyes, nose, or mouth.

An individual who is closer than 6 feet from an infected person is more likely to get sick; however, the disease can be transmitted at distances further than 6 feet, especially if:

- The space is enclosed and does not have adequate ventilation.
- A person is exposed to a large number of respiratory droplets.
- A person is exposed to respiratory droplets for a prolonged period of time.

Infection through contact with objects or surfaces (fomites) contaminated with respiratory droplets has been documented, but transmission risk is generally considered to be low.

Infection through inhalation of aerosolized particles can occur, especially during aerosol-generating procedures (AGPs), including but not limited to nebulizer treatments, intubation, bronchoscopies, tracheotomies, cardiopulmonary resuscitation, and noninvasive positive pressure ventilation.

Studies have documented SARS-CoV-2 transmission during the presymptomatic incubation period. The proportion of SARS-CoV-2 transmission due to asymptomatic or presymptomatic infection compared with symptomatic infection is not clear, however studies show that people who are not showing symptoms can still transmit the virus.

Limited data exists about reinfection with SARS-CoV-2 after recovery from COVID-19. Published case reports have shown reinfection is possible, but it is still unclear how long people who have recovered from COVID-19 are protected against reinfection with SARS-CoV-2, what concentration of antibodies is needed to confer protection, and how often re-infection may occur.

Susceptibility

Individuals at highest risk for severe disease and death include people aged 60 years and older (particularly older than age 85), people with underlying factors, including immunosuppression from solid organ transplant, sickle cell disease, cardiovascular disease, hypertension, diabetes, chronic kidney disease, chronic respiratory disease, cancer, smoking, and obesity, especially those who live in congregate settings, such as nursing homes and assisted living facilities.

Other populations of concern include individuals with intellectual disabilities who live in congregate settings, due to a higher incidence of comorbidities, and an inability to social distance and follow guidelines such as the wearing of face masks.

Incubation period

The median incubation period for COVID-19 is 4–5 days from exposure, with a range of up to 14 days.

Period of communicability

The period of communicability of SARS-CoV-2 declines rapidly after 14 days post-exposure as demonstrated in Figure I.

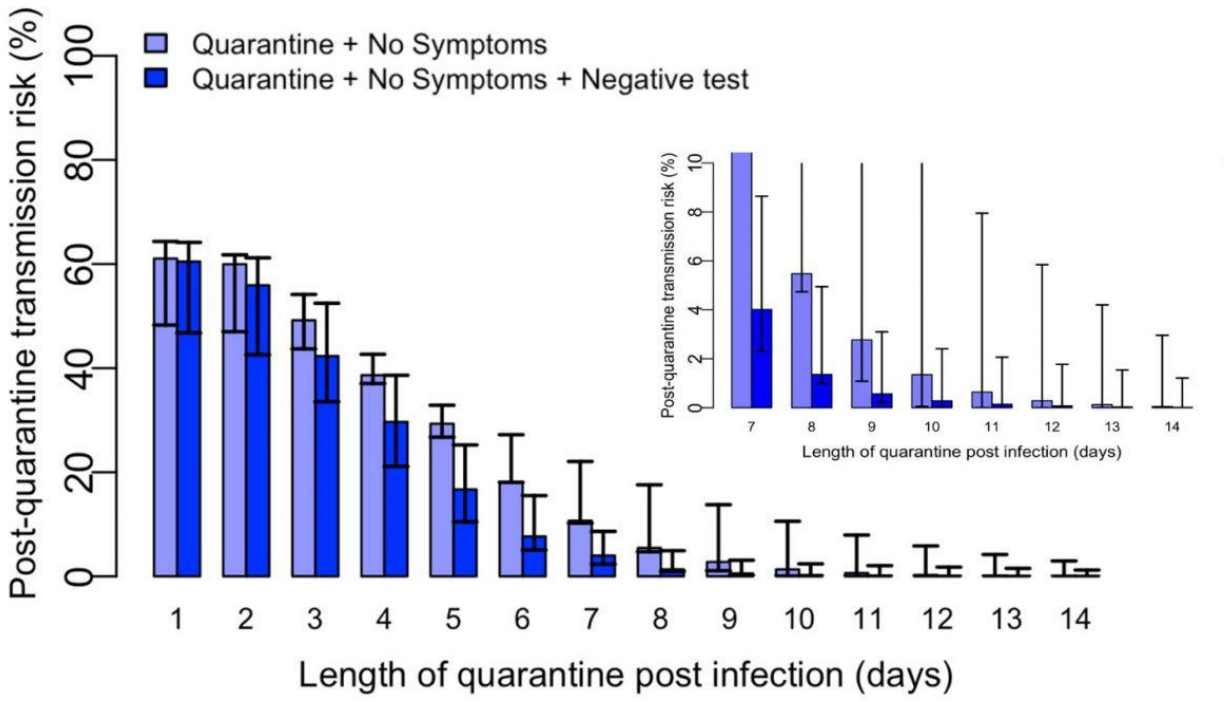

Figure I - Modeled estimates of post-quarantine transmission risk quarantine duration. The light blue bars indicate the daily post-quarantine transmission risk if there is no clinical evidence of COVID-19 elicited during daily symptom monitoring. The dark blue bars indicate the post-quarantine transmission risk with the addition of a negative RT-PCR result from a specimen collected 24-48 hours prior (Source: Centers for Disease Control and Prevention, 2020).

Epidemiology

People all around the world have been affected by SARS-CoV-2 during the ongoing pandemic.

- For current global information, including confirmed cases, deaths, and administered vaccine doses, see the WHO Coronavirus (COVID-19) Dashboard.
- For current U.S. information, see the CDC COVID-19 Data Tracker.
- For current Utah information, see the UDOH COVID-19 Data Dashboard.

Genetic variants of SARS-CoV-2 have been emerging and circulating around the world during the COVID-19 pandemic, with multiple variants circulating in the U.S and Utah. The U.S. has developed a Variant Classification scheme through a U.S. government interagency group.

COVID-19 in animals is still being studied, however at this time, there is no evidence that animals play a significant role in spreading SARS-CoV-2 to people, and the risk is considered low.

It is known that people can spread SARS-CoV-2 to animals in some situations. Reports of animals infected with SARS-CoV-2 include companion animals (cats and dogs), big cats and gorillas in zoos, and mink on farms.

Public health control measures

Public health responsibility

- Promote wellness through disease investigation and vaccine administration.
- Conduct case investigation, contact tracing, and active monitoring as resources allow.
- Identify clusters or outbreaks of the disease through contact tracing and laboratory testing.
- Provide education to the general public (regarding disease transmission) and to clinicians (regarding disease diagnosis, reporting, and prevention).
- Facilitate screening and outbreak testing in residential facilities such as long-term care and assisted living facilities.
- Conduct infection control (ICAR) assessments and risk assessments for healthcare facilities.
- Provide infection control advice and expertise for case management discussions, including cohorting recommendations and setting up COVID-19 only facilities or areas.
- Coordinate with the DHHSand CDC to ensure potentially infectious travelers are identified and appropriately educated.
- Ensure adequate access to testing, especially PCR tests, to facilitate case identification and whole genome sequencing.
- Promote vaccination to reduce disease burden in the community.
- Monitor disease trends to identify changes which may lead to revisions of guidance and policy change.

Prevention

Vaccines

The primary method of COVID-19 prevention is vaccination. In the U.S. there are currently 3 vaccines authorized for emergency use or approved by the FDA and recommended by the Advisory Committee on Immunization Practices (ACIP).

Masks

Wearing a face mask is a simple and effective way to prevent the spread of COVID-19 and significantly decrease the chance a person will spread the virus to others or be infected by the virus in any setting. This is especially critical for those who have not been vaccinated, those who may be immunocompromised, and/or are in a setting or community where there is a high level of viral transmission occurring.

Physical distancing

The safest practices include mainiting 6 feet of distance between individuals when interacting outside the home. It is important to recognize that COVID-19 vaccines significantly decrease the risk of transmission and infection; however the risk still exists in vaccinated individuals.

Hygiene

The CDC also recommends the following hygiene practices to help prevent the spread of respiratory or airborne illnesses, including COVID-19:

- Cover mouth and nose with a tissue when coughing or sneezing; use sleeve or elbow if a tissue is not available.
- Put used tissues in a waste basket.
- Wash hands often with soap and water for at least 20 seconds.
- Use an alcohol-based hand sanitizer (at least 60% alcohol) if soap and water are not available.
- Clean high-touch surfaces daily, and disinfect frequently touched surfaces using products in EPA List N.

Screening for healthcare workers

Healthcare workers should be screened prior to entering a healthcare setting each day of work. For more information, see the COVID-19 Healthcare Worker Screening Tool.

Personal protective equipment

A fit-tested N95 mask or higher level respirator, gown, eye protection, and gloves should be worn during aerosol-generating procedures (AGP), and for at least an hour after completion of the AGP in the room it was performed, regardless of vaccination status.

For more information, see Utah PPE recommendations for long-term care facilities and CDC guidance on proper donning and doffing of PPE.

Prophylaxis

Evusheld is approved for PrEP in severely immunocompromised people, but is not useful for the general population. Overwhelming evidence specifically recommends against the use of hydroxychloroquine for SARS-CoV-2 PEP. Healthcare providers should follow recommendations from the Advisory Committee on Immunization Practices (ACIP) when using SARS-CoV-2 vaccines.

For additional information, see the National Institutes of Health COVID-19 Treatment Guidelines.

Vaccine

For the latest recommendations on what it means to be up-to-date on your COVID-19 vaccinations, visit https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html. Individuals are considered fully vaccinated if it has been 14 days since receiving the final dose of their primary COVID-19 vaccine series. Both symptomatic and asymptomatic people who have tested positive for COVID-19 should get vaccinated after meeting criteria for discontinuing isolation.

The primary method of COVID-19 prevention is vaccination. Four vaccines are currently FDA-approved or authorized for emergency use in the U.S. and recommended by the ACIP:

- Pfizer-BioNTech/COMIRNATY
- Moderna
- Johnson & Johnson/Janssen
- Novavax

Pfizer-BioNTech: The Pfizer-BioNTech/COMIRNATY vaccine is currently recommended for persons 6 months of age and older. The vaccine is given as a 2-dose series, with doses administered 3–8 weeks apart.

Some individuals who are moderately or severely immunocompromised should receive a 3rd primary dose of the Pfizer-BioNTech COVID-19 vaccine, administered 28 days after the 2nd primary dose. This 3rd primary dose is in addition to up to 2 booster doses, depending on age.

Some moderately or severely immunocompromised individuals aged 5 and older who received a primary 3rd dose may be eligible for a booster to increase protection against severe COVID-19 disease. The booster dose should be given at least 3 months after the primary 3rd dose. This is a shorter period of time between completion of the primary vaccination series and a 1st booster than what is recommended for people who are not moderately or severely immunocompromised. For most people who are not

immunocompromised, they are recommended to get a booster dose at least 5 months after the final dose in the primary series.

Adults ages 50 and older and those who are moderately or severely immunocompromised, may choose to receive a 2nd booster dose using an mRNA COVID-19 vaccine at least 4 months after the 1st booster dose.

Moderna: The Moderna vaccine is currently recommended for persons 6 months of age and older. The vaccine is given as a 2-dose series, with doses administered 4–8 weeks apart.

Some individuals aged 6 months and older who are moderately or severely immunocompromised should receive a 3rd primary dose of the Moderna COVID-19 vaccine, administered 28 days after the 2nd primary dose. This 3rd primary dose is in addition to up to 2 booster doses, depending on age.

Some moderately or severely immunocompromised individuals aged 18 and older who received a primary 3rd dose may be eligible for an mRNA booster to increase protection against severe COVID-19 disease. The booster dose should be given at least 3 months after the primary 3rd dose. This is a shorter period of time between completion of the primary vaccination series and a 1st booster than what is recommended for people who are not moderately or severely immunocompromised. For most people

Most people who are not immunocompromised are recommended to get a booster dose at least 5 months after the final dose in the primary series.

Adults ages 50 and older, or those who are moderately or severely immunocompromised may choose to receive a 2nd booster dose using an mRNA COVID-19 vaccine at least 4 months after the 1st booster dose.

Johnson & Johnson/Janssen: The Johnson & Johnson vaccine is currently recommended for persons 18 years of age and older; however the CDC has stated a preference to give individuals either Moderna or Pfizer based on the risk-benefit ratio. The vaccine is 1-dose.

Most people are eligible for a booster dose of mRNA vaccine, at least 2 months after the 1st dose.

Adults aged 50 years and older, people who are moderately or severely immunocompromised, and adults who received a primary vaccine and booster dose of Johnson & Johnson's Janssen COVID-19 vaccine may be eligible to receive a 2nd booster dose using an mRNA COVID-19 vaccine given at least 4 months after the 1st booster

After a short pause, CDC and FDA recommended that use of the Johnson & Johnson vaccine resume effective April 23, 2021. Women younger than 50 years of age should be aware of the rare risk of blood clots with low platelets after receiving the vaccine.

Novavax: The Novavax vaccine is currently recommended for persons 18 years of age and older. The vaccine is given as a 2-dose series, with doses administered 3–8 weeks apart. A 3rd primary dose of Novavax is not currently authorized for people who are moderately or severely immunocompromised. Novavax is also not authorized for use as a booster dose at this time.

For more information, see information from CDC about the effectiveness of COVID-19 vaccines. Additional information from the U.S. Food and Drug Administration can be found on the Pfizer-BioNTech/COMIRNATY, Moderna, Johnson & Johnson, and Novavax vaccines.

The recommended COVID-19 vaccination schedule can be found on the CDC website.

Isolation and quarantine requirements

Quarantine and isolation guidelines continue to change as we get more data and learn more. Quarantine guidelines are based on whether you are up-to-date with your COVID-19 vaccinations as recommended by the CDC. Being up-to-date on your COVID-19 vaccinations includes having all of the recommended doses of the vaccine, as well as any recommended booster doses. Updates to these recommendations are expected. The most current recommendations about what is considered up-to-date on vaccinations should be followed at the time of the event.

Isolation: Isolation is for people who test positive or have symptoms of COVID-19. The disease can be transmitted to others starting approximately 2 days before symptoms begin, until the isolation period is over. In asymptomatic individuals, the infectious period is assumed to start approximately 2 days prior to the day of being tested for COVID-19. Isolation is required for all people who test positive for COVID-19 regardless of whether they are vaccinated or unvaccinated.

Individuals should isolate until:

- They are fever-free for 24-hours, without using fever-reducing medications, and
- Symptoms have improved for 24 hours, and
- It has been at least 5 days since the day symptoms started (if symptomatic) or from the day of the positive test (if no symptoms).
- Wear a mask around others for 5 days after the end of isolation, including in the home when around others, during extracurricular activities, and outside.

During isolation, individuals should:

- Stay home

- Wear a mask if unable to stay at least 6 feet away from other individuals in the home; other individuals in the home should also wear a mask in these situations..
- Stay in different rooms from other household members, including use of a different bathroom.
- Clean frequently-touched surfaces often.
- Try not to use the same items as other people in the house.
- If an individual needs medical attention, seek assistance and let healthcare workers know the person is positive for COVID-19.
- It is recommended individuals get a rapid antigen COVID-19 test before returning to normal activities (work, school, etc.)
    - If positive, the person should continue to isolate and can re-test 24 hours later. If the person continues to test positive, the longest time they need to isolate from the day of symptom onset (or day tested if asymptomatic) is 10 days.

Quarantine: Quarantine is for people who may have been exposed to COVID-19 but who haven't tested positive or developed symptoms. A 14-day quarantine is still the best way to protect other people from being exposed to the virus. However, a person does not need to quarantine at home if they are up-to-date on their COVID-19 vaccinations or they have tested positive for COVID-19 in the last 90 days. The person should take precautions like wearing a well-fitting mask around other people and in public for 10 days after their exposure. It is also recommended that individuals get a COVID-19 test 5 days after exposure.

After an exposure, individuals should stay at home and away from others as much as possible.

- Stay home from work, school, church, or other activities outside of the home.
- Limit visitors within the home.
- Take appropriate precautions such as physical distancing and wearing masks if it is necessary to be around other people, washing hands often, and cleaning frequently-touched surfaces often.
- Improve ventilation, if possible, in the home.

Individuals who travel domestically or internationally should follow the most recent CDC guidance for quarantine and testing before and after traveling.

For more information, see COVID-19 Quarantine and Isolation.

Healthcare personnel (HCP):

HCP refers to both paid and unpaid persons working in healthcare settings, regardless of whether they provide direct patient care.

Quarantine: HCP who are not up-to-date on their COVID-19 vaccinations and have had a higher-risk exposure to SARS-CoV-2 should be restricted from work for 10 days, or 7 days with a negative viral test on day 5-7 per CDC guidance.

Isolation: HCP who test positive for SARS-CoV-2 may return to work 10 days from the onset of symptoms or the date of the positive test if asymptomatic. Work restriction may be shortened to 7 days for HCP who are not immunocompromised or are not severely ill provided **all** of the following are met: negative viral test at 5-7 days, at least 24 hrs have passed since last fever or use of fever-reducing medication, and symptoms have improved.

Healthcare facilities experiencing staff shortages may refer to CDC guidance for strategies to reduce or eliminate quarantine and/or isolation for HCP.

HCP should be screened for symptoms prior to each shift, and isolate and test with any reported symptoms. The Healthcare Worker Screening Tool should be used to assist with symptom screening.

Long-term care facilities, intermediate care facilities for individuals with intellectual disabilities (ICF/IID), and other similar settings:

Quarantine: Residents who are not up-to-date on their COVID-19 vaccinations and are newly admitted to a long-term care facility should quarantine for 10 days, or 7 days with a negative viral test on day 5-7 following admission or following close contact with a person infected with SARS-CoV-2 per CDC guidance.

Isolation: Residents who test positive for SARS-CoV-2 should be placed in isolation for a minimum of 10 days from the onset of symptoms and until at least 24 hours have passed since last fever or use of fever-reducing medication, and symptoms have improved. Residents who are asymptomatic should isolate for 10 days following the date of the positive test (day 0). Facilities should follow CDC guidance for resident isolation based on the resident's severity of symptoms and immunocompromised status.

Visitors should be screened for symptoms, infection status, and quarantine status before they enter the facility using the Visitor Screening Tool.

Patients who are transferred from hospitals to long-term care facilities, or to their home with home health and hospice should follow the Assessment Form.

Healthcare settings transferring patients to another facility should use the Interfacility Transfer Form.

For additional guidance or clarification, email HAI@utah.gov.

Other congregate settings (group homes, juvenile homes, residential treatment centers, etc.)
People who live in congregate settings do not need to quarantine after an exposure if they:

- Are up-to-date with their COVID-19 vaccines.
- Have had a positive COVID-19 viral test within the last 90 days.

Individuals who meet this criteria should:

- Wear a well-fitting mask around other people for 10 days from the date of last close contact with a COVID-19 positive person (the date of last close contact is considered day 0).
- Get tested at least 5 days after last close contact with the COVID-19 positive person. If COVID-19 symptoms develop or a test is positive, isolate from other people.
    - For those who tested positive for COVID-19 using a viral test in the previous 90 days and subsequently recovered and remain asymptomatic, quarantine and testing after close contact is not necessary. A well-fitting mask should be worn around other people for 10 days from the date of last close contact with a COVID-19 positive individual (the date of last close contact is considered day 0).

Correctional facilities (prisons, jails, etc.) strategies for everyday operations*

*For guidance on enhanced and outbreak protocols see CDC's Guidance on Prevention and Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities and work with local public health.

Incarcerated/detained persons

During everyday operationsy, new intakes should either be screened for COVID-19 (regardless of symptoms or vaccination status) or be put under observation period. Observation periods should be 7-10 days if the residents under observation are not tested at the end of the observation period. A shorter period (minimum of 5 days) could be used if combined with testing at the end of the observation period. New intakes should not be quarantined in the same spaces as individuals who are quarantined because they were exposed to someone with COVID-19. Doing so may cause additional exposures or outbreaks of COVID-19 in the facility.

Persons exposed to COVID-19 should quarantine for a minimum of 10 days from last exposure and be tested 5 days after exposure, or as soon as symptoms develop. Facilities should make every possible effort to individually quarantine close contacts of people with confirmed or suspected COVID-19. Cohorting multiple quarantined close contacts could transmit COVID-19 from those who are infected to those who are uninfected. Cohorting should only be practiced if there are no other available options. Facilities should re-test exposed people as a cohort every 3–7 days regardless of their COVID-19 vaccination status until testing identifies no new cases in the cohort for 14 days from the most recent positive result. Local or state public health should work closely with correctional facilities to mitigate outbreaks and may need to adjust these guidelines on a case by case basis.

Individuals with symptoms of COVID-19, regardless of vaccination status or history of disease, should be given a mask (if not already wearing one and it can be worn safely), immediately placed under medical isolation in a separate environment from other individuals, tested for SARS-CoV-2, and medically evaluated.

Vaccinations should be offered and recommended for incarcerated/detained persons.

Staff

Vaccinations are recommended for all staff who work in correctional facilities. Staff members who present with COVID-19-like symptoms should leave the facility and seek testing immediately.

General quarantine is recommended for 10 days since the last exposure; however, staff should monitor for signs and symptoms for 14 days since their last exposure. For modified quarantine recommendations see Table 3. Standard and modified quarantine approaches in correctional and detention facilities on the CDC Guidance on Prevention and Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities.

For more information, see the CDC Guidance on Prevention and Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities.

K-12 staff and students

The DHHS recommends a layered prevention approach consistent with CDC school guidelines to minimize the impact of COVID-19 exposures and outbreaks in school settings and maximize opportunities for children to participate in in-school learning and extracurricular activities.

Layered prevention includes, but is not limited to:

- Vaccination against COVID-19 for all staff and students who are eligible.
- Consider mask wearing while indoors for all staff and students in areas with high COVID-19 transmission.
- Immediate isolation of staff and students who experience symptoms of COVID-19. Anyone with symptoms of COVID-19 should not attend school or extracurricular activities, and should get tested for SARS-CoV-2 (regardless of vaccination status).
- Regular screening testing of staff and students.

Management of K-12 staff and students who test positive for COVID-19 (isolation)

Staff and students who test positive for COVID-19 should isolate at home for 5 days from the first day they (staff/student) experienced symptoms, or if asymptomatic, 5 days from the day they were tested, regardless of vaccination status. It is recommended staff and students get a COVID-19 antigen test before returning to school.

Management of K-12 staff and students exposed to COVID-19 (quarantine)

Management of COVID-19 exposures in a K-12 school will be a locally-driven response. Local health departments should work in close coordination with local education agencies to determine how to respond to exposures in the school and prevent further spread of the virus.

Staff and students who are exposed to COVID-19 and who are not up-to-date with their COVID-19 vaccinations or who have not tested positive for COVID-19 in the last 90 days should quarantine at home for 5 days after exposure. They should also wear a mask around others and in public, including at school, for another 5 days after they end their isolation at home. It is recommended staff and students who are exposed to COVID-19 get a COVID-19 test 5 days after exposure.

Local health authorities may work with local education agencies (LEAs) to identify alternatives to quarantine or require additional mitigation strategies in the school or classroom to protect the health of K-12 students and school staff in their area. In order to protect in-person learning, minimize the burden of contact tracing on local health departments and schools, and fulfill the duty to protect health, after a classroom SARS-CoV-2 exposure occurs, the local health authority has the discretion to recommend quarantine or other mitigation strategies to all individuals who interacted with a SARS-CoV-2 positive individual in:

- A shared classroom, or
- An indoor activity for more than 15 minutes, or
- An extracurricular activity.

Exposed staff members or students, including those who are up-to-date with their COVID-19 vaccinations, who develop symptoms of COVID-19 following an exposure should immediately isolate at home and seek COVID-19 testing.

Case investigation

Reporting

Clinical criteria for reporting

In the absence of a more likely diagnosis, any medically attended person with:

- At least two of the following symptoms:
    - Fever (measured or subjective)
    - Chills
    - Rigors
    - Myalgia
    - Headache
    - Sore throat

  - Nausea or vomiting
  - Diarrhea
  - Fatigue
  - Congestion or runny nose

OR

- Any one of the following symptoms:
  - Cough
  - Shortness of breath
  - Difficulty breathing
  - New olfactory disorder
  - New taste disorder

OR

- Severe respiratory illness with at least one of the following:
  - Clinical or radiographic evidence of pneumonia
  - Acute respiratory distress syndrome (ARDS)

Laboratory criteria for reporting

- Detection of SARS-CoV-2 RNA in a clinical specimen using a molecular amplification test.
- Detection of specific antigen in a clinical or autopsy specimen.
- Detection of specific antibody in serum, plasma, or whole blood.

Epidemiologic linkage criteria for reporting

In a person with clinically compatible symptoms with one of more of the following exposures in the 14 days before onset of symptoms:

- Close contact* with a confirmed or probable case of COVID-19 disease; OR
- Member of a risk cohort as defined by public health authorities during an outbreak

**Close contact is generally defined as being within six feet for at least 15 minutes. However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper protective equipment (PPE), this may be defined as any duration. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.*

Vital records criteria for reporting

A person whose death certificate lists COVID-19 disease or SARS-CoV-2 as an underlying cause of death or a significant condition contributing to death.

Other criteria for reporting

Autopsy findings consistent with pneumonia or acute respiratory distress syndrome without an identifiable cause.

Disease-specific data elements to be included in the initial report

In addition to patient demographics, the following disease-specific data elements are expected to be included in all reports to public health agencies:

Laboratory information

- Specimen type
- Collection date
- Laboratory test performed
- Results

Clinical information

- Description of clinical symptoms and signs of illness, or if asymptomatic
- Date of illness onset
- Hospitalization
- Underlying diseases or co-infections

Epidemiologic information

- Known contact or linkage to COVID-19 cases
- Member of a risk cohort as defined by public health authorities during an outbreak

Table II: Criteria to determine whether a case should be reported to public health authorities (2021)

Criterion	COVID-19		
Clinical criteria for reporting			
Patient medically attended	N	N	
At least <u>two</u> of the following symptoms: • Fever (measured or subjective) • Chills • Rigors • Myalgia • Headache • Sore throat • Nausea or vomiting	O	O	

• Diarrhea • Fatigue • Congestion or runny nose			
Any <u>one</u> of the following: • Cough • Shortness of breath • Difficulty breathing • New olfactory disorder • New taste disorder	O	O	
Clinical or radiographic evidence of pneumonia	O	O	
Acute respiratory distress syndrome (ARDS)	O	O	
No alternative more likely diagnosis	N	N	
Laboratory criteria for reporting			
Detection of SARS-CoV-2 in a clinical specimen using a molecular amplification test			S
Detection of specific antigen in a clinical or autopsy specimen			S
Detection of specific antibody in serum, plasma, or whole blood			S
Epidemiological linkage criteria for reporting			
Close contact* in the 14 days before onset of symptoms with a confirmed or probable case of COVID-19 disease		O‡	
Member of a risk cohort, as defined by public health authorities during an outbreak, in the 14 days before onset of symptoms		O‡	
Vital records criteria for reporting			
A person whose death certificate lists COVID-19 disease or SARS-CoV-2 as an underlying cause of death or a significant condition contributing to death			S
Other criteria for reporting			
Autopsy findings consistent with pneumonia or acute respiratory distress syndrome with an identifiable cause			S

Notes:

S = This criterion alone is SUFFICIENT to report a case.
N = All "N" criteria in the same column are NECESSARY to report a case.
O = At least one of the "O" (ONE OR MORE) criteria in each category (categories - clinical evidence, laboratory evidence, and epidemiological evidence) in the same column - in conjunction with all "N" criteria in the same column - is required to report a case.
**Close contact is generally defined as being within 6 feet for at least 15 minutes. However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper personal protective equipment (PPE), this may be defined as any duration. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.*
‡*Epidemiologic linkage criteria are considered with clinical evidence, but are not sufficient, in the absence of symptoms, to report to public health.*

Case definition
COVID-19 (2021)

Clinical criteria

In the absence of a more likely diagnosis:

- At least <u>two</u> of the following symptoms:
    - Fever (measured or subjective)
    - Chills
    - Rigors
    - Myalgia
    - Headache
    - Sore throat
    - Nausea or vomiting
    - Diarrhea
    - Fatigue
    - Congestion or runny nose

  OR

- Any <u>one</u> of the following symptoms:
    - Cough
    - Shortness of breath
    - Difficulty breathing
    - New olfactory disorder
    - New taste disorder

  OR

- Severe respiratory illness with at least one of the following:
    - Clinical or radiographic evidence of pneumonia,
    - Acute respiratory distress syndrome (ARDS)

Laboratory criteria

Laboratory evidence using a method approved or authorized by the FDA or designated authority:

*Confirmatory** laboratory evidence:*

- Detection of SARS-CoV-2 RNA in a clinical or autopsy specimen using a molecular amplification test.

*Presumptive** laboratory evidence:*

- Detection of SARS-CoV-2 by antigen test in a respiratory specimen.

*Supportive** laboratory evidence:*

- Detection of specific antibody in serum, plasma, or whole blood.
- Detection of specific antigen by immunocytochemistry in an autopsy specimen.

  ***The terms confirmatory, presumptive, and supportive are categorical labels used here to standardize case classifications for public health surveillance. The terms should not be used to interpret the utility or validity of any laboratory test methodology.*

Epidemiologic linkage

One or more of the following exposures in the prior 14 days:

- Close contact* with a confirmed or probable case of COVID-19 disease;
- Member of a risk cohort as defined by public health authorities during an outbreak.

  **Close contact is generally defined as being within 6 feet for at least 15 minutes. However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper PPE, this may be defined as any duration. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.*

Vital records criteria

A death certificate that lists COVID-19 disease or SARS-CoV-2 as an underlying cause of death or a significant condition contributing to death.

Case classification

Confirmed

- Meets confirmatory laboratory evidence.

Probable

- Meets clinical criteria AND epidemiologic linkage with no confirmatory lab testing performed for SARS-CoV-2.
- Meets presumptive laboratory evidence.
- Meets vital records criteria with no confirmatory laboratory evidence for SARS-CoV-2.

Suspect

- Meets supportive laboratory evidence*** with no prior history of being a confirmed or probable case.

  *** *For suspect cases (positive serology only), jurisdictions may opt to place them in a registry for other epidemiological analyses or investigate to determine probable or confirmed status.*

Criteria to distinguish a new case of this disease or condition from reports or notification which should not be enumerated as a new case for surveillance:

A repeat positive test for SARS-CoV-2 RNA using molecular amplification detection test within 3 months of the initial report should not be enumerated as a new case for surveillance purposes. To date, there has been minimal evidence of re-infection among persons with a prior confirmed COVID-19 infection and growing evidence that repeat positive RNA tests do not correlate with active infection when viral culture is performed. Similarly the experience with other coronaviruses is that reinfection is rare within the 1st year. NOTE: The time period of 3 months will be extended further when more data becomes available to show risk of reinfection remains low within 1 year of initial report.

Table III: Criteria for defining a case of COVID-19 (2021)

Criterion	Confirmed	Probable			Suspect
Clinical evidence					
At least <u>two</u> of the following symptoms: ● Fever (measured or subjective) ● Chills ● Rigors ● Myalgia ● Headache ● Sore throat ● Nausea or vomiting ● Diarrhea ● Fatigue ● Congestion or runny nose		O			

Cough		O			
Shortness of breath		O			
Difficulty breathing		O			
New olfactory disorder		O			
New taste disorder		O			
Clinical or radiographic evidence of pneumonia		O			
Acute respiratory distress syndrome (ARDS)		O			
No alternative more likely diagnosis		N			
Laboratory evidence					
Detection of SARS-CoV-2 RNA in a clinical or autopsy specimen using a molecular amplification test**	S				
Detection of SARS-CoV-2 by antigen test** in a respiratory specimen			S		
Detection of specific antibody*** in serum, plasma, or whole blood**					O
Detection of specific antigen by immunocytochemistry** in an autopsy specimen					O
Absence of molecular amplification detection test for SARS-CoV-2 RNA		N		N	
Epidemiological linkage evidence					
Close contact* with a confirmed or probable case of COVID-19 disease in the 14 days before onset of symptoms		O			
Member of a risk cohort, as defined by public health authorities during an outbreak, in the 14 days prior to symptom onset		O			
Vital records evidence					
A death certificate that lists COVID-19 disease or SARS-CoV-2 as an underlying cause of death or a significant condition contributing to death				N	

Other evidence					
No prior history of being a confirmed or probable case					N
Criteria to distinguish a new case					
Positive SARS-CoV-2 RNA molecular amplification detection test** with specimen collection more than 3 months after initial report	N	N/A	N/A	N/A	N/A

Notes:
S = This criterion alone is SUFFICIENT to classify a case.
N = All "N" criteria in the same column are NECESSARY to classify a case. A number following an "N" indicates that this criterion is only required for a specific disease/condition subtype (see below). If the absence of a criterion (i.e., criterion is NOT present) is required for the case to meet the classification criteria, list the absence of criterion as a necessary component.
O = At least one of these "O" (ONE OR MORE) criteria in each category (categories = clinical evidence, laboratory evidence, and epidemiologic evidence) in the same column - in conjunction with all "N" criteria in the same column - is required to classify a case. A number following an "O" indicates that this criterion is only required for a specific disease/condition subtype.
**Close contact is generally defined as being within 6 feet for at least 15 minutes. However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper PPE, this may be defined as any duration. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.*
***Test must be approved or authorized by the FDA or designated authority.*
****For suspect cases (positive serology only), jurisdictions may opt to place them in a registry for other epidemiological analyses or investigate to determine probable or confirmed status.*

See Appendix A in CSTE Interim-20-ID-02 for the Epidemiological Classification of Work-Relatedness.

Vaccine breakthrough

A vaccine breakthrough case is defined as:

- SARS-CoV-2 RNA or antigen positive respiratory specimen collected ≥14 days after completing the primary series of an FDA authorized or approved SARS-CoV-2 vaccine.
- Exclusions:
    - Received vaccine not authorized or approved by FDA.
    - Did not receive a full primary series.
    - Positive specimen collected <14 days after completing primary series.
    - Previous positive test <90 days prior to current positive test.

Case investigation process

Cases of COVID-19 should be managed as follows:

- Immediately notify local and state health departments.
- Obtain appropriate laboratory samples and preliminary clinical and epidemiologic information (including vaccine history and travel history).
- Impose strict isolation until at least 5 days from onset of symptoms, or if asymptomatic, from the day tested; must also be fever and respiratory symptom-free for at least 24 hours prior to ending isolation (without using fever-lowering medicine).
- Identify and appropriately manage all case contacts (explained in detail below).

The source of the exposure should be identified.

Case investigation prioritization

There may be times when the public health system needs to focus investigations, public health efforts, and resources to prevent severe illness, hospitalizations, and death. To maximize efforts during prioritization, manual case investigation/contact tracing may be stopped across the general population, on a timeline determined by each local health jurisdiction, based on need. Efforts will focus on investigating outbreaks of cases at highest risk for severe outcomes (hospitalization, death) and general case management as resources allow.

When prioritized COVID-19 investigation is implemented, areas of focus will include:

- Investigation of outbreak-associated cases in high-risk or priority settings, or on those at highest risk for transmission and severe disease. This may include congregate settings such as jails, prisons, LTCFs, homeless shelters; high-risk worksites/industries; and other settings as determined by local health jurisdiction.
- Cases located in hotspots, which may be defined by geography or demographics, or may be based on a high incidence of hospitalizations or deaths. Local health jurisdictions will have the flexibility to further define this as it pertains to their district.
- Cases and outbreaks in LTCFs.
- Cases and outbreaks in schools and childcare centers.
- Cases or outbreaks of variants of concern.
- Hospitalized cases.
- Deaths.

Innovative practices may be used at the state and local level to prevent and mitigate hospitalizations and deaths.

- Local health jurisdictions will define and determine use of these strategies, which may include:
    - Door-to-door contact in hotspot areas to promote COVID-19 vaccination, testing, and novel therapeutics.
    - Specific, focused engagement with high-risk industries to promote COVID-19 vaccination, testing, and novel therapeutics.

    - Specific, targeted messaging; and outreach to congregate settings and other areas of potentially high transmission.
- The Utah Department of Health and Human Services may provide elements of case management, including but not limited to, individual support to cases or a subset of cases, outreach to those who qualify for novel therapeutics, and outreach to priority populations who are due for a COVID-19 booster vaccine.

Shifting personnel and funding resources away from broad case investigation activities will allow for targeted and innovative interventions, while maximizing funding to cover the most critical activities for sustained response.

Outbreaks

There may be state or local restrictions that impact an outbreak response. Please refer to current state legislation or local public health orders for more information contact UDOH.

COVID-19 outbreak guidance for non-residential, non-healthcare workplace settings

Non-residential, non-healthcare workplace settings are workplaces where employees do not live on site and include, but are not limited to, the following: food and other manufacturing facilities such as meat and poultry processing, construction sites, office buildings, warehouses, restaurants/grocery stores, personal care, and other service providing establishments such as salons, cleaners, and maid services.

Outbreak definition: Per CSTE, an outbreak is defined as 2* or more laboratory-confirmed COVID-19 cases among workers at a facility with onset of illness within a 14-day period (symptom onset date or testing date, if asymptomatic), who are epidemiologically linked, do not share a household, and are not listed as a close contact of each other outside of the workplace.

*Health departments may consider a higher threshold for defining an outbreak if there is a high case rate in the community.

Outbreak resolution: In the workplace setting, an outbreak is defined as "resolved" if no new probable or confirmed COVID-19 cases have been identified and 28 days (two incubation periods) have passed since the latest onset date or specimen collection date (whichever is later).

COVID-19 outbreak guidance for healthcare settings

Outbreak definition: Healthcare settings identified with 2 or more laboratory confirmed employees or residents within a 14-day onset date window of each other should be issued an outbreak code. The CSTE case definition has been broken down and simplified by inpatient and outpatient settings. Further details may be found on the CSTE webpage.

Inpatient setting thresholds: An outbreak in an inpatient setting is defined as ≥2 cases of confirmed COVID-19 in a patient or healthcare worker seven or more days after admission for a non-COVID condition, with epi-linkage; OR when ≥3 cases of confirmed COVID-19 in healthcare workers with epi-linkage AND no other more likely sources of exposure for at least 2 of the cases.

Outpatient setting thresholds: An outbreak in an outpatient setting is defined as ≥3 cases of confirmed COVID-19 in patients or healthcare workers, with epi-linkage, AND no other more likely sources of exposure for at least 2 of the cases.

Outbreak resolution: In the healthcare setting, an outbreak is defined as "resolved" if no new probable or confirmed COVID-19 cases have been identified and 14 days (one incubation period) have passed since the latest onset date or specimen collection date (whichever is later). This definition is derived from the CMS & CDC guidance and is how the UDOH HAI program defines resolutions.

COVID-19 outbreak guidance for detention and correctional settings

Detention and correctional settings identified with 2 or more laboratory confirmed COVID-19 employees or incarcerated/detained persons* within a 14-day period (symptom onset date or testing date, if asymptomatic) who are epidemiologically linked.

*Incarcerated/detained persons refers to persons held in a prison, jail, detention center, or other custodial setting. The term includes those who have been sentenced (e.g., in prisons) as well as those held for pre-trial (e.g., jails) or civil purposes (e.g., detention centers).

Outbreak resolution: In the detention/correctional setting, an outbreak is defined as "resolved" if no new probable or confirmed COVID-19 cases have been identified and 28 days (two incubation periods) have passed since the latest onset date or specimen collection date (whichever is later).

COVID-19 outbreak guidance for residential, shared, or congregate housing facilities

Residential, shared, or congregate housing facilities include non-healthcare student or faculty housing, transitional housing, shelters, and group homes. Outbreaks in these settings are identified when 2 or more laboratory confirmed employees or residents* within a 14-day period (symptom onset date or testing date, if asymptomatic) are epidemiologically linked.

*In long-term care facilities, a single case will trigger an outbreak investigation. Please contact the Utah Department of Health and Human Services Healthcare Associated Infections/Antimicrobial Resistance (HAI/AR) team for further assistance hai@utah.gov.

Outbreak resolution: In the residential, shared, or congregate facility setting, an outbreak is defined as "resolved" if no new probable or confirmed COVID-19 cases have been identified after 28 days (2 incubation periods) have passed since the latest onset date or specimen collection date (whichever is later).

Outbreak response/investigation

The outbreak response lead should focus on the following when responding to outbreaks. Note that all actions may not be needed.

1. Create an outbreak in EpiTrax.
2. Contact event coordinator, facility, worksite, family, etc., to:
    a. Review best practices for prevention and mitigation of COVID-19 and isolation/quarantine guidelines.
    b. Attempt to identify the index case and factors that contributed to transmission.
    c. Identify additional contacts/cases and link to outbreak in EpiTrax.
3. Ensure close contacts are notified of exposure, quarantine, and testing recommendations.
4. Re-interview cases, as needed.
5. Coordinate testing event, if needed.
    a. DHHS Mobile Test Teams (MTTs) are available to support testing events. Testing may be requested by completing the below forms based on setting.
        i. Long-term care facilities (Contact local health department or HAI/AR Program)
        ii. Community testing events
        iii. School testing events
        iv. Other special events (special populations or critical infrastructure targeted toward specific groups/populations)
            1. Notify MTTs if PCR testing is needed to conduct sequencing.
6. Identify vaccination status of cases/contacts.
7. Coordinate vaccination clinic, if needed.
    a. Mobile vaccination clinics may be requested by completing the applicable form.
        i. Please allow 2 business days for a response with more specific information about what to expect in fulfilling your request. If you have not received a response after two business days, please contact covidvaxinquiry@utah.gov.
        ii. Depending on the volume of requests and available vaccine supply, it may take several weeks to plan and complete your vaccine event request.

Congregate living

If a positive case is identified in a staff member or resident, the facility should begin an outbreak investigation and COVID-19 testing. Information about caring for residents with confirmed COVID-19 infection, suspected COVID-19 infection, or COVID-19 exposure can be found by reviewing the *Establishing an Isolation Unit* document found on the PPE section of the Long-Term Care Facilities webpage.

For personal protective equipment (PPE) recommendations during an outbreak, visit the Long-Term Care Facilities webpage.

For additional PPE supplies, reach out to your local health department or visit the Long-Term Care Facilities webpage.

For information on optimization of PPE, see the CDC Summary for Healthcare Facilities or the PPE section of the Long-Term Care Facilities webpage.

To guide COVID-19 testing during an outbreak, review the testing algorithm.

For facilities with no on-site testing capabilities, reach out to the DHHS Healthcare Associated Infection (HAI) program at HAI@utah.gov, your local health department, or find a testing location near you.

Only essential staff and visitors should be allowed in the facility during an outbreak. Consider holding admissions until containment of the COVID-19 outbreak has been demonstrated. Contact your local health department or HAI/AR Program to create a safe plan for admissions during a COVID-19 outbreak. Disclose information about any outbreak in the facility to essential staff, visitors, residents (current or new), and residents' families.

K-12 schools

K-12 schools experiencing COVID-19 outbreaks should consider implementing COVID-19 screening testing and other mitigation strategies with guidance from their local health departments. Additional prevention strategies in schools are recommended for those who are immunocompromised or otherwise at high risk of severe illness.

Testing guidance

In K-12 schools, COVID-19 screening testing can help promptly identify and isolate cases, initiate quarantine, and identify clusters to help reduce the risk of spread at schools, while supporting in-person learning. A variety of different testing strategies may be used, depending on the needs of each school community. Testing as a prevention strategy can be increased when communities are experiencing severe disease, and decreased when disease burden is stable.

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Identifying close contacts

Close contacts are people who have the following contact with the case patient within 2 days (48 hours) of symptom onset or test date. A close contact is defined as being within 6 feet of a person

who is infectious for a total of 15 minutes or longer (cumulative, within a 24-hour period). This may include:

- Household and immediate family members (those who spend many hours together or sleep under the same roof),
- Those who have direct contact with respiratory secretions,
- Healthcare workers with face-to-face contact with a patient,
- Those who share confined space during the communicable period. Such contacts may include:
    - Core groups of close friends, social contacts, dating or intimate partners.
    - Students within the same classroom or extracurricular activity.
    - Contacts at church activities and employment.
    - Participants in extracurricular activities (such as field trips, club sports, etc.).
    - Children who attend a child care center, after-school care, or a playgroup.

Case contact management

When cases are identified, it is the responsibility of public health to:

- Notify exposed high- and medium-risk contacts of their exposure and provide the contact with appropriate guidance.
- Assess high- and medium-risk contacts for probable case definition. If a contact is determined to be a probable case, the contact will be investigated and isolation will be recommended.
- Provide education on proper quarantine measures and self-monitoring.
- Educate and encourage vaccination after isolation or quarantine.

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Version control

V.08.21: Created disease plan.

V.11.21: Added language regarding full FDA approval of vaccines. Updated link for information about face masks. Added language about pediatric vaccine recommendations, booster doses, and updated vaccine name of COMIRNATY. Updated testing date recommendation after exposure. Updated number of days individuals who are exposed to COVID-19 since last testing positive. Added language about masking, monitoring, and testing after exposure. Updated information for correctional facilities regarding actions to take with fully vaccinated and unvaccinated individuals. Added section on vaccine breakthrough. Sections updated: *Prevention; Vaccine; Isolation and Quarantine Requirements; Vaccine Breakthrough.*

V.01.22: Created new section *Case Investigation Prioritization.* Updated Quarantine and Isolation guidance to align with new CDC guidance. Added information about Evusheld. Updated up-to-date information on vaccines. Updated Case Contact Management section to note move to Automated Contact Tracing System, removed testing referrals. Sections updated *Coronavirus Disease 2019 Critical Clinician Information; Prophylaxis; Vaccine; Isolation and Quarantine Requirements; created a new section - Case Investigation Prioritization; Case Contact Management.*

V.07.22: Updated vaccine and contact management sections of *Critical clinician information* table. Updated *Vaccine* section with recommendations for additional booster doses and removed information about monoclonal antibodies in this section; updated scheduling information and added Novavax. Updated *Isolation and quarantine* section with masking information. Updated quarantine information in *Correctional facilities* section. Updated quarantine information in *Managing COVID-19 exposures in K-12 students and staff* section. Updated quarantine and isolation guidance in the *Other congregate settings* section. Updated quarantine and isolation guidance in the *Long-term care facilities , intermediate care facilities for individuals with intellectual disabilities, and other similar settings* section. Added section for Healthcare Personnel in *Isolation and quarantine requirements* section. Updated *K-12 schools* section to include testing guidance.

UT-NEDSS/EpiTrax minimum/required fields by tab

Demographic

- Last name
- First name
- Phone number
- Email
- Date of birth
- Sex
- Street address
- City
- State
- Zip code
- Race
- Ethnicity
- Does the case have any tribal affiliation?

Clinical

- Did you receive a COVID-19 vaccine?
    - Did you complete your vaccine series at least 14 days prior to becoming ill or receiving your lab result?
    - Vaccine type
    - Administration date
    - Dose #
    - Manufacturer
- Did you experience any symptoms?
    - If yes, what date did you begin feeling sick (onset date)?

Laboratory

- Specimen type
- Collection date
- Laboratory test performed
- Results
- Performing laboratory
- Organism

Investigation

- Was the case interviewed?
- In the 14 days prior to your symptom onset, have you had any known contact with a confirmed COVID-19 case?
    - If yes, what type of contact?
    - Does the PUI or case have a known epidemiological link (close contact within 14 days of symptom onset) with a confirmed or probable case of COVID-19?
- In the 14 days prior to your symptom onset, did you visit a school as a teacher, student, staff, volunteer, or visitor? Specify.
- In the 48 hours (2 days) before you started feeling sick, or while you were sick, did you visit, work in, or live in any place that provides medical care like a doctor's office or hospital?
- Are you a healthcare worker or support staff in a healthcare setting? (Examples include cooks, environmental services)
- Do you live or work in a long-term care facility? (Examples include nursing homes, assisted living facilities, group homes for intellectually disabled individuals, independent living facilities, etc.) If yes:
    - Name of the facility
    - Type of facility
    - Are you a resident?
    - Are you a staff member?

    - Were you in the facility in the 48 hours before feeling sick or while you were sick?
- In the 48 hours (2 days) before you started feeling sick, or while you were sick, did you go into work?
- What is your main occupation?
- In the 14 days prior to your symptom onset, did you travel outside of Utah?
- In the 14 days prior to your symptom onset, have you had any of the following exposures:
    - Childcare center
    - Correctional facility
    - Community event/mass gathering
    - Restaurant and/or bar
    - Gym or other fitness center
    - Sporting event
- Did you come to the U.S. as a refugee? Were you ever supported by the Refugee Services Office or a resettlement agency?

Administrative

- Date first reported to public health
- State case status (completed by DHHS)

Electronic laboratory reporting processing rules

COVID-19 rules for entering laboratory test results

The following rules describe how laboratory results reported to public health should be added to new or existing events in UT-NEDSS/EpiTrax. These rules have been developed for the automated processing of electronic laboratory reports, although they apply to manual data entry, as well.

Test-specific rules

Test specific rules describe what test type and test result combinations are allowed to create new morbidity events in UT-NEDSS/EpiTrax, and what test type and test result combinations are allowed to update existing events (morbidity or contact) in UT-NEDSS/EpiTrax.

Test type	Test result	Create a new event	Update an existing event
Antigen by DFA/IF	Positive	Yes	Yes
	Negative	Yes	Yes
	Equivocal	Yes	Yes
	Other	No	Yes
PCR/amplification	Positive	Yes	Yes
	Negative	Yes	Yes
	Equivocal	Yes	Yes
	Other	Yes	Yes
IgM antibody	Positive	No	Yes
	Negative	No	Yes
	Equivocal	No	Yes
	Other	No	Yes
IgG antibody	Positive	No	Yes
	Negative	No	Yes
	Equivocal	No	Yes
	Other	No	Yes
IgA antibody	Positive	No	Yes
	Negative	No	Yes
	Equivocal	No	Yes
	Other	No	Yes
Total antibody (by EIA, IFA, TRF, etc.)	Positive	No	Yes
	Negative	No	Yes
	Equivocal	No	Yes
	Other	No	No

Whole genome sequencing	Positive	No	Yes
	Negative	No	Yes
	Equivocal	No	Yes
	Other	No	No

Whitelist rules

Whitelist rules describe how long an existing event can have new laboratory data appended to it. If a laboratory result falls outside the whitelist rules for an existing event, it should not be added to that event, and should be evaluated to determine if a new event (CMR) should be created.

Coronavirus, Novel (2019-nCoV) morbidity whitelist rule: If the specimen collection date of the laboratory result is 90 days after the event date; 90 days before the event date, the laboratory result should be added to the morbidity event.

Coronavirus, Novel (2019-nCoV) contact whitelist rule: If the specimen collection date of the laboratory result is 30 days or less after the event date of the contact event, the laboratory result should be added to the contact event.

Graylist rule

We often receive laboratory results through ELR that cannot create cases, but can be useful if a case is created in the future. These laboratory results go to the graylist. The graylist rule describes how long an existing event can have an old laboratory result appended to it.

Coronavirus, Novel (2019-nCoV) graylist rule: If the specimen collection date of the laboratory result is 30 before to 7 days after the event date of the morbidity event, the laboratory result should be added to the morbidity event.