

COVID-19 (SARS-CoV-2)

Also known as: 2019 Novel Coronavirus, COVID

Responsibilities:

Hospital: Report by IDSS, facsimile, phone, or mail

Lab: Report by IDSS, facsimile, phone, or mail

Physician: Report by facsimile, phone, or mail

Iowa Department of Public Health

Disease Reporting Hotline: (800) 362-2736

Secure Fax: (515) 281-5698

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Agent

COVID-19 is caused by the virus *SARS-CoV-2*.

B. Clinical Description

People with COVID-19 can have had a wide range of symptoms – from asymptomatic or mild to severe illness. This can include:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

This list does not include all possible symptoms. Older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness.

If someone has any of the following symptoms, they should seek emergency medical care immediately:

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone

C. Reservoir

COVID-19 is spread from person-to-person. Although we do not know the exact source of COVID-19, we know that it originally came from an animal, likely a bat.

D. Modes of Transmission

COVID-19 spreads when an infected person breathes out droplets and very small particles that contain the virus. These droplets and particles can be breathed in by other people or land on their eyes, noses, or mouth. In some circumstances, they may contaminate surfaces they touch. People who are closer than 6 feet from the infected person are most likely to get infected.

E. Incubation Period

Symptoms may appear 2-14 days after exposure to the virus.

F. Period of Communicability or Infectious Period

The majority of SARS-CoV-2 transmission occurs early in the course of illness, generally in the 1-2 days prior to onset of symptoms and the 2-3 days after.

G. Epidemiology

- People of any age, even healthy young adults and children, can become infected with COVID-19.
- Persons who are older or have underlying health conditions have been found to be at greater risk for poor outcomes including hospitalization and death.
- COVID-19 was first recognized as a cluster of pneumonia illnesses in Wuhan, China in December 2019.
- By early 2020, COVID-19 had demonstrated the necessary criteria for a pandemic which includes a new virus, that the entire population is susceptible to, with global spread.
- COVID-19 has subsequently been found to circulate around the world, including the United States.
- Nations and states have experienced different peaks of virus activity since its introduction and more continues to be learned about the evolving seasonal patterns of COVID-19.

H. Zoonotic Risk(s)

- There is no current evidence that animals play a significant role in spreading SARS-CoV-2 to people. Based on the available information to date, the risk of animals spreading COVID-19 to people is considered to be low.

2) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To monitor geographic, demographic, and seasonal trends of SARS-CoV-2 activity in Iowa.
- To identify the presence, relative proportion and impact of SARS-CoV-2 variants.
- To evaluate potential immunity among Iowans via serologic/antibody test results.
- To identify clusters and outbreaks of COVID-19 that require targeted public health action.
- To understand and adjust COVID-19 control strategies.

B. Laboratory and Healthcare Provider Reporting Requirements

Iowa Administrative Code 641-1.3(139) stipulates that the laboratory and the healthcare provider must report. The preferred method of reporting is by utilizing the Iowa Disease Surveillance System (IDSS). However, if IDSS is not available, the reporting number for IDPH Center for Acute Disease Epidemiology (CADE) is (800) 362-2736; fax number (515) 281-5698, mailing address:

IDPH, CADE
Lucas State Office Building, 5th Floor
321 E. 12th St.
Des Moines, IA 50319-0075

Health care providers can report results from patients who used at-home testing at <https://redcap.link/HomeTestReporting>. This is not necessary for at-home tests sent to SHL for testing via the Test Iowa Program.

C. Laboratory Testing:

- Where is COVID-19 testing available?
 - Testing is available through Iowa’s State Hygienic Laboratory (SHL), as well as numerous commercial and clinical laboratories across Iowa. There is no cost for testing at SHL.
 - For more information about testing at SHL, including collection/handling and test request forms, visit <https://covidtesting.shl.uiowa.edu/>.
- Who should get tested?
 - People who have symptoms of COVID-19.
 - People who have had close contact with someone with confirmed COVID-19, regardless of vaccination status.
 - People who feel they have had a high risk exposure, such as travel, attending large social or mass gatherings, or being in crowded or poorly-ventilated indoor settings.
 - People who have been asked or referred to get testing by their school, workplace, healthcare provider, or health department.
- What types of testing are available?
 - Viral tests, including PCR and antigen tests are used to detect infection with SARS-CoV-2 and to inform an individual’s medical care.
 - Antibody (or serology) tests are used to detect previous infection with SARS-CoV-2 and can aid in the diagnosis of Multisystem Inflammatory Syndrome in Children (MIS-C) and in adults (MIS-A). Antibody testing should not be used to diagnose current infection.
 - Self-collection (i.e. “At-Home”) kits and tests are available by prescription or over the counter in a pharmacy or retail store. At-home test kits are also available from SHL via the Test Iowa program – more information is available at www.testiowa.com. Currently available self-collection kits and tests are used for the detection of current infection. Some at-home tests involve samples taken by a patient and sent in to a laboratory for testing to be performed. The results of those tests are required to be reported by the laboratory to public health. Some at-home tests involve samples that are taken by a patient and a result is immediately provided with a healthcare provider supervising remotely. These kinds of at-home test results should be reported by the healthcare provider to public health. Some at-home tests involve samples that are taken by a patient and a result is provided immediately without any laboratory or healthcare provider supervision. Among these are some test types with a built-in electronic interface for reporting to public health. These kinds of at-home tests can help to inform individual decision-making. All persons who contact public health about at-home tests should be advised on the best practice public health recommendations for staying home and alerting exposed persons to minimize risk. Health care providers can report results from patients who used at-home testing at <https://redcap.link/HomeTestReporting>. This is not necessary for at-home tests sent to SHL for testing via the Test Iowa Program.
 - Genomic sequencing of COVID-19 can be performed by the SHL and several other laboratories. However, this testing is not currently indicated for use in individual patient decision-making and instead is used for population level surveillance (see full guidance below).

- Testing animals for SARS-CoV-2:
 - Routine testing of animals for SARS-CoV-2 is not currently recommended and veterinarians are encouraged to consider other, more common causes of illness in animals and should use their clinical judgement when deciding whether to test animals for SARS-CoV-2.
 - SARS-CoV-2 animal testing is available at the Iowa State University Veterinary Diagnostic Laboratory (ISU VDL).
 - Veterinary requests for testing at ISU VDL will be jointly evaluated on a case-by-case basis by the State Veterinarian, Federal Area Veterinarian-In-Charge, and the State Public Health Veterinarian.
 - Confirmatory testing through USDA's National Veterinary Services Laboratories (NVSL) is required for all animals except domestic cats and dogs from state, territorial, local, and tribal jurisdictions that have previously confirmed SARS-CoV-2 in cats and dogs.
 - The following factors will be considered as part of the case-by-case determination of whether animal testing is appropriate through the ISU VDL:
 - Is there a known epidemiological link to a COVID-19 positive human?
 - Is the animal showing any clinical signs that could be compatible with what is known about SARS-CoV-2 infection in that species?
 - Has current research indicated that the animal species can be infected with SARS-CoV-2?
 - Have more likely causes of illness (based upon clinical signs in the animal(s)) been ruled out?

Genomic sequencing

SHL is conducting variant strain surveillance in partnership with established influenza surveillance sites across the state. Identified clinics and hospitals that participate in influenza surveillance are voluntarily submitting PCR positive specimens (with Ct's less than 30) for COVID-19 sequencing.

Additionally, since January 2021, SHL has increased capacity to sequence SARS-CoV-2 and now accept all PCR positive SARS-CoV-2 samples for sequencing. If the Ct value is less than 30, please submit the sample to SHL. If the Ct value is unknown, submit the sample and SHL will determine the Ct value before performing the sequencing.

To order sequencing, please use SHL's "IDPH Coronavirus COVID-19 Test Request Form" found on SHL's webpage: www.shl.uiowa.edu/testmenu/formgenerator.xml.

Sequence testing is not currently FDA approved, therefore submitting healthcare providers will not receive sequencing results as this is not a test currently intended for clinical decision-making.

D. Local Public Health Agency (LPHA) Follow-Up Responsibilities

Case Investigation

1. Routine follow-up is not required for individual cases of COVID-19.
2. There is no need to conduct investigations for persons with positive serology results. Serology results indicate past infection, and the infectious period cannot be determined.
3. If surveillance identifies clusters or outbreaks of COVID-19, additional investigation may be warranted to determine if targeted public health recommendations and/or laboratory follow-up is required. Consult with an epidemiologist at IDPH if an outbreak is suspected.

Contact the assigned field epidemiologist for questions or assistance is needed at 800-362-2736.

3) CONTROLLING FURTHER SPREAD AND PREVENTING DISEASE

A. Persons who test positive for COVID-19 are recommended to stay home until they are no longer infectious

If you test positive for COVID-19 and *have symptoms*, isolate for at least 5 days. Day 0 is your first day of symptoms.

- You can end isolation after 5 full days if you are fever-free for 24 hours without the use of fever-reducing medication and your other symptoms have improved (Loss of taste and smell may persist for weeks or months after recovery and need not delay the end of isolation).
- You should continue to wear a well-fitting mask around others at home and in public for 5 additional days (day 6 through day 10) after the end of your 5-day isolation period. If you are unable to wear a mask when around others, you should continue to isolate for a full 10 days. Avoid people who are immunocompromised or at high risk for severe disease, and nursing homes and other high-risk settings, until after at least 10 days.
- If you continue to have fever or your other symptoms have not improved after 5 days of isolation, you should wait to end your isolation until you are fever-free for 24 hours without the use of fever-reducing medication and your other symptoms have improved. Continue to wear a well-fitting mask.
- Do not travel during your 5-day isolation period. After you end isolation, avoid travel until a full 10 days after your first day of symptoms. If you must travel on days 6-10, wear a well-fitting mask when you are around others for the entire duration of travel. If you are unable to wear a mask, you should not travel during the 10 days.
- Do not go to places where you are unable to wear a mask, such as restaurants and some gyms, and avoid eating around others at home and at work until a full 10 days after your first day of symptoms.

If an individual has access to a test and wants to test, the best approach is to use an antigen test towards the end of the 5-day isolation period. Collect the test sample only if you are fever-free for 24 hours without the use of fever-reducing medication and your other symptoms have improved (loss of taste and smell may persist for weeks or months after recovery and need not delay the end of isolation). If your test result is positive, you should continue to isolate until day 10. If your test result is negative, you can end isolation, but continue to wear a well-fitting mask around others at home and in public until day 10. Follow additional recommendations for masking and restricting travel as described above.

People who are severely ill with COVID-19 (including those who were hospitalized or required intensive care or ventilation support) and people with compromised immune systems might need to isolate at home longer. They may also require testing with a viral test to determine when they can be around others. CDC recommends an isolation period of at least 10 and up to 20 days for people who were severely ill with COVID-19 and for people with weakened immune systems. Consult with your healthcare provider about when you can resume being around other people.

Reminder: All persons who are experiencing an illness should stay home while they are ill, even if they test negative for COVID-19 or receive an alternative diagnosis.

If you test positive for COVID-19 and *never develop symptoms*, isolate for at least 5 days. Day 0 is the day of your positive viral test (based on the date your specimen was collected).

- If you continue to have no symptoms, you can end isolation after at least 5 days.
- You should continue to wear a well-fitting mask around others at home and in public until day 10 (day 6 through day 10). If you are unable to wear a mask when around others, you should continue to isolate for 10 days. Avoid people who are immunocompromised or at high risk for severe disease, and nursing homes and other high-risk settings, until after at least 10 days.
- If you develop symptoms after testing positive, your 5-day isolation period should start over. Day 0 is your first day of symptoms. Follow the recommendations above for ending isolation for people who test positive for COVID-19 and have symptoms.
- Do not travel during your 5-day isolation period. After you end isolation, avoid travel until 10 days after the day of your positive test. If you must travel on days 6-10, wear a well-fitting mask when you are around others for the entire duration of travel. If you are unable to wear a mask, you should not travel during the 10 days after your positive test.
- Do not go to places where you are unable to wear a mask, such as restaurants and some gyms, and avoid eating around others at home and at work until 10 days after the day of your positive test.

If an individual has access to a test and wants to test, the best approach is to use an antigen test towards the end of the 5-day isolation period. If your test result is positive, you should continue to isolate until day 10. If your test result is negative, you can end isolation, but continue to wear a well-fitting mask around others at home and in public until day 10. Follow additional recommendations for masking and restricting travel described above.

Note: Isolation and testing recommendations differ for exposed health care providers. To view health care provider guidelines, visit www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html.

B. Individuals should be evaluated for exposure in outbreaks/clusters

When follow-up is performed, close contact is defined as being less than 6 feet away from an infectious person for more than 15 consecutive minutes **AND** the case, the contact, or both were not wearing a face covering during the interaction. Acceptable face coverings are described in CDC guidance at www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/types-of-masks.html.

C. Those who have been exposed to COVID-19 may need to stay home and should mask and get tested.

If you came into close contact with someone with COVID-19 and you are in one of the following groups, you do *not* need to quarantine.

- You are up to date with your COVID-19 vaccines (see table below).
- You had confirmed COVID-19 within the last 90 days (meaning you tested positive using a viral test).

You should wear a well-fitting mask around others for 10 days from the date of your last close contact with someone with COVID-19 (the date of last close contact is considered day 0). Get tested at least 5 days after you last had close contact with someone with COVID-19. If you test positive or develop COVID-19 symptoms, isolate from other people and follow recommendations for isolation. If you tested positive for COVID-19 with a viral test within the previous 90 days and subsequently recovered and remain without COVID-19 symptoms, you do not need to quarantine or get tested after close contact. You should wear a well-fitting mask around others for 10 days from the date of your last close contact with someone with COVID-19 (the date of last close contact is considered day 0).

You are up to date with your COVID-19 vaccines when you have followed the current recommendations listed below. The recommendations will be different depending on your age, your health status, and when you first got vaccinated.

Pfizer-BioNTech ^[1]	Moderna ^[1]	Johnson & Johnson's Janssen ^[1,2]
Ages Recommended 5+ years old	Ages Recommended 18+ years old	Ages Recommended 18+ years old
Primary Series 2 doses ^[3,4] Given 3 weeks (21 days) apart ^[5]	Primary Series 2 doses ^[3] Given 4 weeks (28 days) apart ^[5]	Primary Series 1 dose
Fully Vaccinated 2 weeks after final dose in primary series	Fully Vaccinated 2 weeks after final dose in primary series	Fully Vaccinated 2 weeks after 1st dose
Booster Dose Everyone ages 12+ should get a booster dose at least 5 months after the last dose in their primary series. <ul style="list-style-type: none"> • Teens 12–17 should only get a Pfizer-BioNTech COVID-19 Vaccine booster • Everyone 18+ should get a booster dose of either Pfizer-BioNTech or Moderna (mRNA COVID-19 vaccines) 	Booster Dose Everyone ages 18+ should get a booster dose of either Pfizer-BioNTech or Moderna (mRNA COVID-19 vaccines) at least 5 months after the last dose in their primary series.	Booster Dose Everyone ages 18+ should get a booster dose of either Pfizer-BioNTech or Moderna (mRNA COVID-19 vaccines) at least 2 months after the first dose of J&J/Janssen COVID-19 Vaccine. You may get J&J/Janssen in some situations .
When Boosted A person is considered “boosted” and up to date right after getting their booster dose.	When Boosted A person is considered “boosted” and up to date right after getting their booster dose.	When Boosted A person is considered “boosted” and up to date right after getting their booster dose.

If you come into close contact with someone with COVID-19, you **should** quarantine if you are not up to date on COVID-19 vaccines (see table above). This includes people who are not vaccinated.

What to do for quarantine

- Stay home and away from other people for at least 5 days (day 0 through day 5) after your last contact with a person who has COVID-19. The date of your exposure is considered day 0. Wear a well-fitting mask when around others at home, if possible.
- For 10 days after your last close contact with someone with COVID-19, watch for fever, cough, shortness of breath, or other COVID-19 symptoms.
- If you develop symptoms, get tested immediately and isolate until you receive your test results. If you test positive, follow isolation recommendations.
- If you do not develop symptoms, get tested at least 5 days after you last had close contact with someone with COVID-19.
 - If you test negative, you can leave your home, but continue to wear a well-fitting mask when around others at home and in public until 10 days after your last close contact with someone with COVID-19.
 - If you test positive, follow isolation recommendations.
 - If you are unable to get a test 5 days after last close contact with someone with COVID-19, you can leave your home after day 5 if you have been without COVID-19 symptoms throughout the 5-day period. Wear a well-fitting mask for 10 days after your date of last close contact when around others at home and in public.
 - Avoid people who are immunocompromised or at high risk for severe disease, and nursing homes and other high-risk settings, until after at least 10 days.
- If possible, stay away from people you live with, especially people who are at higher risk for getting very sick from COVID-19, as well as others outside your home throughout the full 10 days after your last close contact with someone with COVID-19.
- If you are unable to quarantine, you should wear a well-fitting mask for 10 days when around others at home and in public.
- If you are unable to wear a mask when around others, you should continue to quarantine for 10 days. Avoid people who are immunocompromised or at high risk for severe disease, and nursing homes and other high-risk settings, until after at least 10 days.
- Do not travel during your 5-day quarantine period. Get tested at least 5 days after your last close contact and make sure your test result is negative and you remain without symptoms before traveling. If you don't get tested, delay travel until 10 days after your last close contact with a person with COVID-19. If you must travel before the 10 days are completed, wear a well-fitting mask when you are around others for the entire duration of travel during the 10 days. If you are unable to wear a mask, you should not travel during the 10 days.
- Do not go to places where you are unable to wear a mask, such as restaurants and some gyms, and avoid eating around others at home and at work until after 10 days after your last close contact with someone with COVID-19.

Note: Quarantine and testing recommendations differ for exposed health care providers. To view health care provider guidelines, visit www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assessment-hcp.html.

D. Vaccination

Everyone ages 5 and older can get vaccinated against COVID-19.

All currently authorized and recommended COVID-19 vaccines:

- are safe,
- are effective, and
- reduce your risk of severe illness.

More information about vaccination is available at

www.cdc.gov/coronavirus/2019-ncov/vaccines/keythingstoknow.html.

E. Managing Special Situations

School

Students and teachers who test positive for COVID-19 should remain home until they are no longer infectious. If a case of COVID-19 is identified in a school, exposed students and teachers should consider staying home in accordance with public health best practices to monitor for symptoms. If a student or teacher becomes symptomatic they should stay home while ill and consider getting tested.

The recommendations for quarantine and isolation outlined above in this document do apply to K-12 School settings. Additional CDC guidance is available at www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-contact-tracing/about-quarantine.html.

If a cluster or outbreak of COVID-19 is identified in a school, additional investigation may be warranted to determine if targeted public health recommendations and/or laboratory follow-up is required. Consult with an epidemiologist at IDPH or contact your regional epidemiologist if an outbreak is suspected.

Child care

Child care attendees and staff who test positive for COVID-19 should remain home until they are no longer infectious. If a case of COVID-19 is identified in a child care facility, exposed attendees and staff should consider staying home in accordance with public health best practices to monitor for symptoms. If an attendee or staff member becomes symptomatic they should stay home while ill and consider getting tested.

The recommendations for quarantine and isolation outlined above in this document do apply to child care settings. Note that for children who are unable to consistently wear a mask when around others (including all children under 2 years of age) the safest option is to continue to quarantine for a full 10 days. Additional CDC guidance is available at www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/child-care-guidance.html.

If a cluster or outbreak of COVID-19 is identified in a child care facility, additional investigation may be warranted to determine if targeted public health recommendations and/or laboratory follow-up is required. Consult with an epidemiologist at IDPH or contact your regional epidemiologist if an outbreak is suspected.

Congregate Living Settings

Due to the higher health risks of persons residing in long-term care settings, symptomatic residents and staff testing positive on antigen testing for COVID-19 should start the appropriate isolation period. Asymptomatic residents or staff testing positive should be re-

tested using confirmatory PCR testing within 48 hours of the when the positive antigen specimen was collected.

More detailed guidance related to interpreting antigen testing results and the subsequent mitigation steps to enact can be found at <https://idph.iowa.gov/Emerging-Health-Issues/Novel-Coronavirus/Long-Term-Care>.

Correctional and Detention Facilities

In certain high-risk congregate settings that have high risk of secondary transmission and where it is not feasible to cohort people (such as correctional and detention facilities, homeless shelters, and cruise ships), CDC recommends a 10-day isolation period for residents. During periods of critical staffing shortages, facilities may consider shortening the isolation period for staff to ensure continuity of operations. Decisions to shorten isolation in these settings should be made in consultation with public health and should take into consideration the context and characteristics of the facility. CDC's setting-specific guidance provides additional recommendations for these settings.

CDC guidance for correctional and detention facilities can be found at www.cdc.gov/coronavirus/2019-ncov/community/correction-detention/guidance-correctional-detention.html.

Homeless Shelters

In certain high-risk congregate settings that have high risk of secondary transmission and where it is not feasible to cohort people (such as correctional and detention facilities, homeless shelters, and cruise ships), CDC recommends a 10-day isolation period for residents. During periods of critical staffing shortages, facilities may consider shortening the isolation period for staff to ensure continuity of operations. Decisions to shorten isolation in these settings should be made in consultation with public health and should take into consideration the context and characteristics of the facility. CDC's setting-specific guidance provides additional recommendations for these settings.

Specific guidance for homeless shelters can be found at www.cdc.gov/coronavirus/2019-ncov/community/homeless-shelters/plan-prepare-respond.html.

Patient Care Settings

Due to the nature of patient care/healthcare settings, the frequency and types of interactions they have with patients, and the procedures performed, COVID-19 risk can vary. The CDC has made numerous resources available for healthcare workers, many of which are setting specific, that can be found at www.cdc.gov/coronavirus/2019-ncov/hcp/index.html.

You can also consult with the IDPH Healthcare Associated Infections (HAI) Program by calling CADE at (800) 362-2736 and asking to speak with the HAI Program or emailing hai-ar@idph.iowa.gov.

Reported Incidence Is Higher than Usual/Cluster/Outbreak Suspected

Consult with the epidemiologist on-call at CADE, (800) 362-2736. CADE can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several county lines and therefore may be difficult to identify at a local level.

If the number of reported cases in any city or county is higher than usual, or if an outbreak is suspected, investigate clustered cases to identify other potential illnesses and exposures. Recommendations can then be made for people to stay home after an exposure or while sick and testing recommendations can be shared.

F. Travel

If you are planning to travel:

- Delay travel until you are fully vaccinated.
- Check your destination's COVID-19 situation before traveling. State, local, and territorial governments may have travel restrictions in place.
- Wearing a mask over your nose and mouth is required in indoor areas of public transportation (including airplanes) and indoors in U.S. transportation hubs (including airports).
- Do not travel if you have been exposed to COVID-19, you are sick, or if you test positive for COVID-19.
- If you are not fully vaccinated and must travel, get tested both before and after your trip.

CDC travel guidelines change frequently for both vaccinated and unvaccinated travelers. Before you travel, check the latest guidelines by visiting www.cdc.gov/coronavirus/2019-ncov/travelers/index.html.

Additional Resources

IDPH COVID-19 page: <https://idph.iowa.gov/emerging-health-issues/novel-coronavirus>
Coronavirus.iowa.gov: <https://coronavirus.iowa.gov/>
CDC main COVID-19 page: www.cdc.gov/coronavirus/2019-nCoV/index.html
CDC Health Care Provider COVID-19 page: www.cdc.gov/coronavirus/2019-nCoV/hcp/index.html