

# SARS-CoV-2 Infection (COVID-19)

<b>Signs and Symptoms</b>	<ul style="list-style-type: none"> <li>• Estimated 25-40% of cases asymptomatic</li> <li>• Usual: fever, cough, short of breath, chills, fatigue, myalgia, headache, sore throat, loss of smell / taste</li> <li>• Severe: pneumonia, respiratory failure, septic shock, blood clots, multisystem inflammatory syndrome</li> </ul>
<b>Incubation</b>	The median incubation period for Omicron subvariants is 3-4 days (range 2-14 days)
<b>Case classification (for full details see Section 3)</b>	<p><b>Confirmed</b> – Not a previous confirmed or probable case in the prior 90 days AND:</p> <ul style="list-style-type: none"> <li>• Detection of SARS-CoV-2 RNA in a clinical or post-mortem specimen using a diagnostic molecular amplification test performed by a CLIA-certified provider, OR</li> <li>• SARS-CoV-2 RNA detection by genomic sequencing</li> </ul> <p><b>Probable</b> – Not a previous confirmed or probable case in the prior 90 days AND:</p> <ul style="list-style-type: none"> <li>• Detection of SARS-CoV-2 specific antigen in a clinical or post-mortem specimen using a diagnostic test performed by CLIA-certified provider</li> </ul> <p><b>Suspect</b></p> <ul style="list-style-type: none"> <li>• Detection of SARS-CoV-2 specific antigen by immunocytochemistry, OR</li> <li>• SARS-CoV-2 specific antigen or RNA positive result without CLIA oversight (e.g., at-home self-tests), OR</li> <li>• Death certificate includes COVID-19 disease or SARS-CoV-2 or an equivalent term as an underlying cause of death or significant condition contributing to death</li> </ul>
<b>Treatment</b>	Vaccines. Oral and intravenous antiviral agents.
<b>Duration</b>	Likely contagious ~2 days before and up to 10 days after symptom onset (or test date if asymptomatic), can be longer (e.g., 20+ days) if immunocompromised; asymptomatic case may be contagious. Reinfection uncommon within 90 days.
<b>Exposure</b>	Primarily through inhalation of or mucous membrane exposure to fine respiratory droplets and aerosol particles; potential risk from touching mucous membranes with contaminated hands. Longer-range aerosol transmission can occur, especially in poorly ventilated spaces.
<b>Laboratory testing</b>	<p>COVID-19 testing is widely available at clinical laboratories and through over-the-counter test kits.</p> <ul style="list-style-type: none"> <li>• <b>Best specimens (collect using appropriate infection prevention)</b> <ul style="list-style-type: none"> <li>○ Nasal (<b>not</b> NP) swab using synthetic swab in 2-3 ml viral transport media (See DOH <a href="#">Nasal Swab Instructions</a>)</li> <li>○ If intubated, lower respiratory sample (sputum, BAL or tracheal aspirate) in sterile container</li> <li>○ Also consider second nasal swab for rapid flu and respiratory panel at a clinical laboratory</li> </ul> </li> </ul>
<b>Public health actions</b>  <b>URGENT</b>	<ul style="list-style-type: none"> <li>• Determine if a case was likely exposed or infectious in a facility or group. Prioritize healthcare-associated cases and clusters/outbreaks. In most settings, public health contact tracing for individual cases in the community is no longer routine.</li> <li>• Inform the case to stay home except to get medical care; to call the provider before visiting and identify themselves as having COVID-19; to separate themselves from others (particularly sleeping area and bathroom); to avoid sharing household items such as dishes, towels, or bedding; and to follow the guidance in <a href="#">What To Do When You Are Sick With COVID-19 or Another Respiratory Virus</a> for how long to stay home and away from others and for additional precautions to take once they leave isolation.</li> <li>• Provide the following education materials as needed to cases and contacts: <a href="#">What To Do When You Are Sick With COVID-19 or Another Respiratory Virus</a> (includes guidance for what to do if you were exposed to COVID-19 or another respiratory virus).</li> <li>• For additional COVID-19 information see additional <a href="#">CDC resources</a> and <a href="#">DOH resources</a></li> </ul>

# COVID-19 Infection – General

## 1. DISEASE REPORTING

### A. Purpose of Reporting and Surveillance

1. To identify infections due to COVID-19.
2. To prevent the spread of COVID-19.

### B. Legal Reporting Requirements

1. Health care providers and Health care facilities: immediately notifiable to local health jurisdiction (LHJ) including point-of-care/rapid screening tests; providers and facilities performing COVID-19 rapid screening testing shall report as a laboratory and comply with the requirements of WAC 246-101-201 through 246-101-230.

**As of January 1, 2023, by request of provisional reporting, all health care providers and health care facilities may report cases to the LHJ within 24 hours and be compliant with reporting requirements. See the [SARS-CoV-2 provisional reporting letter](#) for more information.**

2. Laboratories: positive results immediately notifiable to local health jurisdiction (LHJ); submission on request – presumptive positive isolate or, if no isolate available, specimen associated with positive result (within 2 business days of request)

**As of January 1, 2023, by request of provisional reporting, all laboratories may report positive test results to the LHJ within 24 hours and be compliant with reporting requirements. See the [SARS-CoV-2 provisional reporting letter](#) for more information.**

3. Local health jurisdictions (LHJ): immediately notifiable to Washington State Department of Health (WA DOH) Office of Communicable Disease Epidemiology (CDE)

**As of January 1, 2023, by request of provisional reporting, all LHJs may notify WA DOH CDE within 3 business days upon receiving a positive case of COVID-19 and be compliant with reporting requirements. See the [SARS-CoV-2 provisional reporting letter](#) for more information.**

4. There are [additional reporting requirements specific to schools and childcare facilities](#).

### C. Local Health Jurisdiction Investigation Responsibilities

1. Contact WA DOH CDE (206-418-5500 or 877-539-4344) with concerns about COVID-19 clusters.
2. Take action to investigate and control outbreaks; provide recommendations for high-risk settings during outbreaks that may differ from general population guidance (e.g., widespread testing, use of quarantine)
3. For outbreak reporting to WA DOH:
  - a. Create an outbreak event in WDRS including summary information (e.g., [total case count](#)) using the [COVID-19 Outbreak Determination/Investigation Form](#) as a guide. LHJs can link outbreak-associated cases in WDRS. Do not link household contacts of

- outbreak-associated cases or others not actually present at the outbreak setting. For additional information on outbreak creation and case linking in WDRS, please see the [Outbreak Events Training Guide](#). To get WDRS Outbreak Manager permission contact [covid19wdrsdevs@doh.wa.gov](mailto:covid19wdrsdevs@doh.wa.gov) OR
- b. To request WA DOH outbreak data support and receive assistance with bulk outbreak and/or case creation and linking, use the Line List Upload Tool for Epidemiologists (LUTE) REDCap tool.
  - c. Additionally, LHJs have the option of using two different Facility Outbreak Notification Tools (FONTs) to gather outbreak details from healthcare facilities and non-healthcare facilities. If your LHJ is interested information on healthcare FONT, contact [HAIEpiOutbreakTeam@doh.wa.gov](mailto:HAIEpiOutbreakTeam@doh.wa.gov) and for information on non-healthcare FONT contact [nhcs-covid@doh.wa.gov](mailto:nhcs-covid@doh.wa.gov).

## 2. THE DISEASE AND ITS EPIDEMIOLOGY

### A. Etiologic Agent

Coronaviruses were named for crown-like surface spikes. Six coronavirus strains were previously known to infect humans: alpha coronaviruses, 229E and NL63 (cause mild to moderate upper respiratory illness); and beta coronaviruses, SARS-CoV (severe acute respiratory syndrome [SARS]), OC43 and HKU1 (upper respiratory illness), and MERS-CoV (Middle East respiratory syndrome). In December 2019, China first reported SARS-CoV-2 (initially called 2019 novel coronavirus) cases. The World Health Organization (WHO) named the illness due to SARS-CoV-2 as COronaVirus Disease-2019 (COVID-19).

Mutations result in new SARS-CoV-2 variants. Although most mutations are not clinically important, of particular concern are variants that transmit more easily; cause more severe disease; or escape diagnostic, therapeutic, or vaccine measures.

### B. Description of Illness

Initial common symptoms may include fever, cough, and shortness of breath, as well as chills, headache, fatigue, muscle aches, sore throat, congestion or runny nose, nausea, diarrhea and loss of taste or smell. 25-40% of all infections may be asymptomatic. Test results may be positive while a person is presymptomatic. Severe to critical complications include pneumonia, respiratory distress, arrhythmias, myocarditis, organ damage such as to liver or kidneys, blood clots (hypercoagulability), encephalomyelitis, stroke, and secondary infections.

Risk of severe illness increases for many factors including age > 65 years; males; women who are pregnant; or those who are overweight or with underlying conditions, such as diabetes, heart disease, lung disease or smoker, neurologic condition, cancer, or immunocompromised (see [CDC page](#) for further details). People who are unvaccinated also have a higher risk of severe illness. Pregnancy complications include pre-eclampsia, coagulopathy, sepsis, and stillbirth (see [CDC guidance](#) for more information). Those negatively impacted by long-standing systemic health and social inequalities are also at higher risk of severe or fatal infection.

Recurrence (or “rebound”) of COVID-19 symptoms and test positivity can occur after

resolution of initial symptoms, with potential for transmission to others. Recurrence has been observed in patients treated with nirmatrelvir/ritonavir (Paxlovid) but can also occur independent of treatment with nirmatrelvir/ritonavir (Paxlovid).

Post-COVID conditions, also referred to as post-acute sequelae of COVID-19 (PASC) or “long COVID,” refer to symptoms that persist or occur at least four weeks after onset of infection. Post-COVID symptoms may differ from those of the acute infection. See CDC’s [public-facing](#) and [healthcare provider](#) pages.

A rare pediatric multisystem inflammatory syndrome (MIS-C) has been associated with COVID-19 with symptoms including fever, rash, conjunctivitis, vomiting, diarrhea, and abdominal and musculoskeletal pain; see CDC [public-facing](#) and [healthcare provider](#) pages for more information. Adult multisystem inflammatory syndrome (MIS-A) cases have also been reported, affecting multiple organs; see CDC [public-facing](#) and [healthcare provider](#) pages for more information.

### C. COVID-19 in Washington

WHO declared a pandemic on March 11, 2020. For updated surveillance data, see below.

Washington: [WA DOH Respiratory Illness Data Dashboard](#)

US: [CDC COVID-19 Data Tracker](#)

Global: [WHO COVID-19 information](#)

### D. Reservoirs

The reservoir for SARS-CoV-2 is unknown but may be pangolins or bats. Sequencing found the virus is most closely related to SARS-CoV so may share its reservoirs. Cats, dogs, mink, and zoo and wild animals (e.g., deer) have had documented SARS-CoV-2 infections but are not considered to have a significant role in contributing to outbreaks among humans.

### E. Modes of Transmission

The infectious dose has not been established for SARS-CoV-2, but brief exposures have resulted in transmission. Most transmission appears to occur early in the infection. The principal mode of transmission is exposure to respiratory fluids in one of three main ways:

- Inhalation of very fine respiratory droplets and aerosol particles (with greatest particle concentration and risk within 3-6 feet of the source)
- Deposition of respiratory droplets and particles on exposed mucous membranes by direct splashes or sprays (e.g., coughed on)
- Touching mucous membranes (eyes, nose, or mouth) with hands that have been contaminated directly or from touching surfaces (probably a lesser route)

Very fine droplets and aerosol particles can remain suspended in the air for minutes to hours. Exposure at greater than 6 feet does occur, typically involving closed spaces with inadequate ventilation or air handling, increased exhalation of respiratory fluids, and exposures that are prolonged (typically over 15 minutes) or briefly intense (e.g., passing through a person’s breathing space). Implicated settings with transmission include fitness facilities, buses, restaurants, and indoor group singing sessions.

Recommendations to prevent transmission include physical distancing, community use of well-fitting masks (e.g., barrier face coverings, procedure/surgical masks), adequate ventilation, and avoidance of crowded indoor spaces. Practicing good hand hygiene and environmental cleaning are also recommended. Appropriate PPE should be used by healthcare personnel (see [COVID-19 Infection Prevention in Healthcare Settings](#) and [CDC guidance on PPE](#)).

## F. Incubation Period

For variants before Omicron the estimated incubation period is 2-14 days, with a median of 5-6 days. For Omicron subvariants, the estimated median incubation period 3-4 days.

## G. Period of Communicability

Two days before to 10 days after symptom onset (some evidence of transmission events occurring >2 days before symptom onset); can be longer (e.g., 20+ days) if immunocompromised or severe COVID-19 illness; people who are immunocompromised should consider talking with their healthcare provider and using a test-based strategy to determine when they are no longer contagious, which can help identify how long to wear a mask and take additional precautions. This can be especially helpful if they are around other people at high risk of getting very sick. Asymptomatic people are communicable.

Cases should isolate until both of the following have been true for at least 24 hours: symptoms are improving and no fever without use of fever-reducing medication. After returning to normal activities, the case should wear a mask and take added precautions over the next 5 days. A person may still be contagious with a respiratory virus after returning to normal activities, so it is important to take additional precautions. Extra precautions can be taken to prevent the spread of COVID-19 to people at high risk of getting very sick; see WA DOH guidance on [what to do when you are sick with COVID-19 or another respiratory virus](#) for further details. This guidance also describes different COVID-19 isolation guidance that should be followed by people living or working in homeless shelters or correctional facilities while in the facility.

The WA DOH guidance [what to do when you are sick with COVID-19 or another respiratory virus](#) does not apply to health care settings but may be followed by residential care settings except when health care services are being provided. People who are working, staying, or visiting in health care settings, including long-term care settings, should follow the guidance in [COVID-19 Infection Prevention in Health Care Settings](#).

Additionally, as mentioned above, some people can experience a COVID-19 “rebound,” with potential for transmission to others. People with recurrence of COVID-19 symptoms or a new positive viral test after having tested negative should restart isolation and then follow the above recommendations.

Reinfections with SARS-CoV-2 are unlikely within 90 days of infection but can occur. See Testing section for information on testing within 90 days of a prior infection.

## H. Treatment

For most non-hospitalized adults at high risk of severe disease, nirmatrelvir/ritonavir (Paxlovid) is first-line treatment.

For an overview of treatment options, see [NIH COVID-19 treatment guidelines](#) and [IDSA COVID-19 guidelines](#)

For information on COVID-19 vaccines, see [CDC guidance on COVID-19 vaccines](#).

### 3. CASE DEFINITIONS

#### A. Case Classification

##### Clinical Criteria

N/A

##### Laboratory Criteria

Laboratory evidence – method approved or authorized (e.g., Emergency Use Authorization) by US Food and Drug Administrations (FDA) or designated authority.\*

Confirmatory\*\* laboratory evidence:

- Detection of SARS-CoV-2 RNA in a clinical or post-mortem specimen using a diagnostic molecular amplification test performed by a Clinical Laboratory Improvement Amendments (CLIA)-certified provider\*\*\* **OR**
- Detection of SARS-COV-2 by genomic sequencing\*\*\*\*

Presumptive\*\* laboratory evidence:

- Detection of SARS-CoV-2 specific antigen in a clinical or post-mortem specimen using a diagnostic test performed by a CLIA-certified provider\*\*\*

Supportive\*\* laboratory evidence

- Detection of SARS-CoV-2 specific antigen by immunocytochemistry, **OR**
- Detection of SARS-CoV-2 RNA or specific antigen using a test performed without CLIA oversight

*\* On March 13, 2020, the President issued a Memorandum on Expanding State-Approved Diagnostic Tests: “Should additional States request flexibility to authorize laboratories within the State to develop and perform tests used to detect COVID-19, the Secretary shall take appropriate action, consistent with law, to facilitate the request.”*

*\*\* 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.*

*\*\*\* Includes those tests performed under a CLIA certificate of waiver.*

*\*\*\*\* Some genomic sequencing tests that have been authorized for emergency use by the FDA do not require an initial polymerase chain reaction (PCR) result to be generated. Genomic sequencing results may be all the public health agency receives.*

**Epidemiologic Linkage**

N/A

**Criteria to Distinguish a New Case from an Existing Case**

The following should be enumerated as a new case:

- Person was most recently enumerated as a confirmed or probable case with onset date (if available) or first positive specimen collection date for that classification >90 days prior<sup>‡</sup>, **OR**
- SARS-CoV-2 sequencing results from the new positive specimen and a positive specimen from the most recent previous case demonstrate a different lineage, **OR**
- Person was previously reported but not enumerated as a confirmed or probable case (i.e., suspect)<sup>‡‡</sup>, but now meets the criteria for a confirmed or probable case.

*<sup>‡</sup>Some individuals, e.g., severely immunocompromised persons, can shed SARS-CoV-2, as detected by molecular amplification tests, >90 days after infection. For severely immunocompromised individuals, clinical judgment should be used to determine if a repeat positive test is likely to result from long-term shedding and, therefore, not be enumerated as a new case. Severe immunocompromise conditions include chemotherapy for cancer, untreated HIV infection with CD4 T lymphocyte count <200, combined primary immunodeficiency disorder, and receipt of prednisone >20mg/day for more than 14 days.*

*<sup>‡‡</sup>Repeat suspect cases should not be enumerated.*

**Vital records criteria:**

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

**Case Classifications**

**Confirmed Case** – Not a previous confirmed or probable case in the prior 90 days AND:

- Meets confirmatory laboratory evidence.

**Probable Case** – Not a previous confirmed or probable case in the prior 90 days AND:

- Meets presumptive laboratory evidence.

**Suspect Case**

- Meets supportive laboratory evidence,<sup>†</sup> **OR**
- Meets vital records criteria with no confirmatory or presumptive laboratory evidence for SARS-CoV-2.

*<sup>†</sup>For suspect cases, jurisdictions may opt to place them in a registry for other epidemiological analyses or investigate to determine probable or confirmed status. Suspect cases should not be included in case counts.*

**B. Multisystem inflammatory syndrome in children (MIS-C):** See [Appendix A: MIS-C](#).

### C. Death Classification

From Jan 1, 2023 onward,

- A COVID-19 associated death is defined as a death where COVID-19 disease or SARS-CoV-2 or an equivalent term is listed on the death certificate as an underlying cause of death or a significant condition contributing to death. More information on COVID-19 death categorization for 2023 onward can be found [here](#).

Prior to Jan 1, 2023,

- A COVID-19 death was defined as either a confirmed or suspect COVID-19 death resulting directly or indirectly from a clinically compatible illness associated with a positive COVID-19 laboratory test. More information on COVID-19 death categorization between 2020-2022 can be found [here](#).

## 4. LABORATORY DIAGNOSIS AND SERVICES

### A. Laboratory Diagnosis

SARS-CoV-2 testing is widely available at clinical laboratories and through over-the-counter test kits, as well as at Washington State Public Health Laboratories (PHL). For uncommon specimen types, PHL can facilitate shipping of specimens to CDC (e.g., autopsy tissues).

Note that coinfections can occur with other agents, such as SARS-CoV-2 and influenza.

### B. SARS-CoV-2 Test Types

A number of tests are available for SARS-CoV-2.

1. Viral tests are either nucleic acid amplification tests (NAAT – also called “molecular tests”) or antigen tests (also called immunoassays). Methods used for NAAT are reverse transcription polymerase chain reaction (RT-PCR) and isothermal amplification (multiple technologies).

NAAT and antigen tests both may be laboratory-based with about a minimum 12-hour turnaround or field-deployable (referred to as rapid tests) with about a 15-minute turnaround. Home self-tests are rapid antigen tests and [can be reported online](#).

For information about NAAT see [CDC guidance](#); APHL also provides [guidance on cycle threshold \(Ct\) values](#).

For information about antigen testing see [CDC antigen testing guidance](#).

2. Antibody/serology tests may detect spike protein, which occurs with either vaccination or infection, or nucleocapsid protein, which occurs only with infection. Antibody tests may identify IgM, IgG, or total antibody.
3. SARS-CoV-2 sequencing (genomic analysis) is not typically used for clinical

decisions but has a variety of uses for public health. Statewide, national, and international sequencing data are used to monitor the evolution of the SARS-CoV-2 virus. Sequencing can also be used for outbreak investigation (e.g., to determine if epidemiologically linked cases are all genetically similar or represent multiple distinct chains of transmission). Further information on SARS-CoV-2 sequencing in Washington and instructions on submitting specimens are available on the WA [DOH Molecular Epidemiology](#) webpage.

It is important to use tests only if they have an FDA Emergency Use Authorization (EUA) or Approval, and to understand characteristics of tests being used. Available products may not have specificity and sensitivity information available. The FDA website has [extensive information](#).

While a Medical Test Site license is generally required to provide SARS-CoV-2 testing, in certain situations, businesses and other establishments without a Medical Test Site license can provide self-tests to individuals to use on-site. See WA DOH [guidance on the use of self-tests](#).

## C. Test Interpretation

### 1. Nucleic acid amplification tests

Nucleic acid amplification tests (NAATs) including PCR may be laboratory-based, which are usually more sensitive, or point-of-care, which are usually more rapid. False-positive results are thought to be rare but can occur from cross-contamination. Because NAAT tests can remain positive for weeks, if testing is indicated for a person with a prior SARS-CoV-2 infection within the last 90 days then an antigen test should be used.

### 2. Antigen tests

Authorized SARS-CoV-2 antigen tests include point-of-care, laboratory-based, and self-tests. Evaluating an antigen test result depends on the clinical and epidemiological context (e.g., symptoms, exposure to others with COVID-19, vaccination status, previous infection, or setting in which they live such as congregate housing). Antigen tests may be less sensitive than PCR; test performance is more dependent on viral load. False negative results can occur if specimens are taken early in infection or late in the illness (i.e., times when viral load is low).

Public health actions based on test results depend on symptoms, immune status, and exposure of the person being tested. Recommendations may differ for a congregate setting, for persons with low likelihood of infection, or for persons with high likelihood of infection.

### 3. Repeat positive tests – criteria to distinguish a new case from an existing case

The following should be enumerated as a new case:

- Person was most recently enumerated as a confirmed or probable case with onset date (if available) or first positive specimen collection date for that classification >90 days prior<sup>‡</sup>, **OR**

- SARS-CoV-2 sequencing results from the new positive specimen and a positive specimen from the most recent previous case demonstrate a different lineage, **OR**
- Person was previously reported but not enumerated as a confirmed or probable case (i.e., suspect)<sup>‡‡</sup>, but now meets the criteria for a confirmed or probable case.

<sup>‡</sup>*Some individuals, e.g., severely immunocompromised persons, can shed SARS-CoV-2, as detected by molecular amplification tests, >90 days after infection. For severely immunocompromised individuals, clinical judgment should be used to determine if a repeat positive test is likely to result from long-term shedding and, therefore, not be enumerated as a new case. Severe immunocompromise conditions include chemotherapy for cancer, untreated HIV infection with CD4 T lymphocyte count <200, combined primary immunodeficiency disorder, and receipt of prednisone >20mg/day for more than 14 days.*

<sup>‡‡</sup>*Repeat suspect cases should not be enumerated.*

#### 4. At-home antigen COVID-19 tests (for reporting self-tests, see [WA DOH guidance](#))

A positive at-home test is evidence of SARS-CoV-2 infection.

A negative at-home test means SARS-CoV-2 was not detected at the time of that test. Any subsequent positive test is most likely SARS-CoV-2 infection. If a person has symptoms consistent with COVID-19 and the initial home test is negative, they should retest every 24-48 hours through at least five days after symptom onset. Alternatively, a molecular test or individual consultation with a healthcare provider can be considered.

#### 5. Non-COVID-19 respiratory infections

If symptoms are compatible with other agents during periods with high levels of respiratory virus infections, when testing for COVID-19 also consider obtaining a second nasal swab or specimen for rapid influenza testing and a viral respiratory panel. As applicable to the clinical situation, also consider testing for infections with specific treatment available (e.g., legionellosis, other bacterial pneumonia, influenza, RSV). Dual infections of COVID-19 and influenza are documented, as well as parainfluenza virus. A particular concern is a dual outbreak in a healthcare or congregate setting (see [WA DOH guidance](#) for further information).

### D. Specimen Collection

It is recommended that a healthcare provider should wear a NIOSH approved and fit tested N95 or higher-level respirator, eye protection, and gloves when actively collecting clinical specimens for SARS-CoV-2 testing or when within 6 feet from the person being tested (see [CDC guidance on planning testing](#)). Instructing the patient on [self-collection of the specimen](#) can help to limit staff exposure during testing. Respirator, eye protection, and gloves should still be used when assisting a patient to self-collect a specimen. If a healthcare provider needs to perform specimen collection, have the patient masked except when taking the specimen and stand to one side of the patient to avoid direct coughs or sneezes. The patient's mask should still cover the mouth when taking a nasal specimen. Refrigerate all specimens at 2-8°C and ship cold for receipt within 72 hours; if exceeding

72 hours holding time, freeze at  $\leq -70^{\circ}\text{C}$  and ship on dry ice.

### **Specimens from Living Patients:**

Acceptable specimens for PHL testing include:

- Nasal swab (preferred)
- Nasopharyngeal swab
- Mid-turbinate swab
- Lower respiratory tract fluid (BAL, tracheal aspirate, or sputum) – if intubated

See [PHL instructions](#) for specimen collection and submission under COVID-19. When testing at a commercial or academic laboratory, see their website for collection and submission instructions.

### **Post-mortem Specimens:**

A medical examiner or coroner can submit specimens directly to CDC. Testing at CDC takes at least four to six weeks. Follow all infection prevention guidance if COVID-19 is possible or confirmed. For details see [CDC guidance](#).

**If an autopsy is NOT performed**, collect the following post-mortem specimens:

- Only upper respiratory tract swab: nasopharyngeal swab
- Separate NP swab and OP swab specimens for testing of other respiratory pathogens (e.g., rapid influenza testing and respiratory panel – not at PHL)

**If an autopsy is performed**, collect the following post-mortem specimens:

- Upper respiratory tract: nasopharyngeal swab in viral transport medium (VTM)
- Lower respiratory tract: lung swab from each lung in separate VTM tubes
- Separate clinical specimens for testing of other respiratory pathogens such as influenza and as indicated for other infectious disease testing
- Formalin-fixed autopsy tissues from lung, upper airway, and other major organs (e.g., heart, liver, kidney) as indicated in [CDC guidance](#)

CDC may request additional specimens, such as serum or stool, in cluster investigations.

## **E. Shipping to PHL**

Store and ship specimens at temperatures indicated above. For details see Coronavirus in the WA [DOH Lab Test Menu](#).

Note that PHL requires all clinical specimens have **two** patient identifiers, a name **and** a second identifier (e.g., date of birth) on both the specimen label and on the submission form. Due to laboratory accreditation standards, specimens will be rejected for testing if not properly identified. Also include specimen source and collection date.

Specimen submission forms should be completed electronically via QRP. To enroll, contact [wacovidtest@doh.wa.gov](mailto:wacovidtest@doh.wa.gov) or 206-418-5419. Before submitting more than 50 specimens at a time to PHL call 206-418-5419. Along with the patient and submitter names, include the dates of collection and illness onset, race and ethnicity (providing demographic data specified in [Coronavirus Aid, Relief, and Economic Security Act](#), or

CARES Act), and patient address and phone. Also make sure there is contact information for the submitter.

#### F. Free or Low-Cost Testing and Testing Reimbursement

HRSA provides information about [testing and billing requirements](#).

#### G. Available Commercial Tests for SARS-CoV-2

A large number of tests including the one in use at PHL have received FDA Emergency Use Authorization; FDA provides [further information on authorizations for diagnostic tests](#).

### 5. ROUTINE CASE INVESTIGATION

#### A. Case investigation and contact tracing

In most settings, public health case investigation and contact tracing for the general public is no longer routinely performed. However, individuals and establishments are encouraged to notify others of exposures. Cases and people who have been exposed should follow the DOH guidance in [What To Do When You Are Sick With COVID-19 or Another Respiratory Virus](#) (includes guidance for people living or working in homeless shelters and correctional facilities). Guidance is different in health care settings – see [COVID-19 Infection Prevention in Health Care Settings](#).

#### B. Outbreak investigations

See [separate outbreak investigation guidance](#) for a healthcare setting or non-healthcare workplace outbreaks.

Note that a person who is part of one outbreak (e.g., large gathering) who then becomes the index case for a new outbreak (e.g., their workplace) should be entered into WDRS for both outbreaks.

An outbreak should be considered over when 14 days (2 incubation periods) have passed since the symptom onset date (or positive test specimen collected date if asymptomatic) of the last known case.

##### 1. Definitions for COVID-19 outbreaks in various settings

- a. Long-term care facility, inpatient hospital setting, or outpatient healthcare setting: see posted [outbreak definition](#) for more information
- b. Non-healthcare congregate setting (such as correctional facilities, homeless shelters, farms, employer-provided congregate housing, or workplaces but not including schools or child cares):

A COVID-19 outbreak at a non-healthcare congregate setting occurs when **all** the following criteria have been met:

- Five or more individuals tested positive for COVID-19 with a [viral test OR at least 20 percent of individuals in a core group\\* tested positive for COVID-19 with a viral test, AND](#)
- The initial people who tested positive had symptoms that started (or took the test that gave a positive result if asymptomatic) within 7 days of each other, AND

- People with COVID-19 were epidemiologically linked (connected by being close contacts or having a shared exposure) in the non-healthcare congregate setting (e.g., people with COVID-19 shared a prison cell or unit, building, employer-sponsored transportation or housing, or work shift) AND
- There is no evidence that the virus was more likely to have spread to the people who tested positive in another setting (e.g., household) outside of the non-healthcare congregate setting.

\*A core group is a set of people who regularly interact, such as people in a shared sleeping space, building, or workplace.

c. School and child care:

All outbreaks or suspected outbreaks of COVID-19 in a school or child care setting are **required** to be reported to the local health jurisdiction ([WAC 246-101](#)). The WA DOH defines an outbreak as follows, in alignment with the Council of State and Territorial Epidemiologists (CSTE) [guidance for classification of school outbreaks](#):

- At least **5 cases within a specified core group**<sup>1</sup> meeting criteria for a COVID-19 case from a positive [viral test](#)
- OR
- Multiple COVID-19 cases from positive viral tests comprising at least **20% of students, teachers, or staff within a specified core group**;<sup>1</sup>

AND

- The following three criteria are met:
  1. Cases have a symptom onset or positive test result within 7 days of each other, AND
  2. There is no evidence that transmission was more likely to have occurred in another setting (e.g., household or outside social contact) outside of the school or child care, AND
  3. Cases were epidemiologically linked<sup>2</sup> in the school or child care setting or a school- or child care-sanctioned extracurricular activity<sup>3</sup>.

<sup>1</sup> A “core group” includes but is not limited to an extracurricular activity<sup>3</sup>, cohort group, classroom, before/after school care, etc.

<sup>2</sup> **All groups of 5 cases or 20% within a specified core group that meet criteria 1 and 2 will be presumed to have an epi-link and must be reported to the LHJ as a suspected outbreak.** The LHJ will make the final determination for classifying an outbreak.

<sup>3</sup> A school- or child care-sanctioned extracurricular activity is defined as a voluntary activity sponsored by the school, local education agency (LEA), organization sanctioned by the LEA, or child care. Extracurricular activities include, but are not limited to, preparation for and involvement in public performances, contests, athletic competitions, demonstrations, displays, and club activities.

## 2. Reporting investigations

Outbreaks in workplaces or other congregate settings should be reported to WA DOH.

- Create an outbreak event in WDRS including summary information (e.g., total case count) using the COVID-19 Outbreak Determination/Investigation Form as a guide. LHJs can link outbreak-associated cases in WDRS. Do not link household contacts of outbreak-associated cases or others not actually present at the outbreak setting. For additional information on outbreak creation and case linking in WDRS, please see the Outbreak Events Training Guide. To get WDRS Outbreak Manager permission contact [covid19wdrsdevs@doh.wa.gov](mailto:covid19wdrsdevs@doh.wa.gov).
- To request WA DOH outbreak data support and receive assistance with bulk outbreak and case creation and linking, use the [Line List Upload Tool for Epidemiologists \(LUTE\)](#) REDCap tool.
- To create an outbreak event in WDRS, a user with “outbreak manager permissions” can click the  icon. Email [covid19wdrsdevs@doh.wa.gov](mailto:covid19wdrsdevs@doh.wa.gov) for help getting this permission.

Please see WDRS [Outbreak Events Training Guide](#) for additional details.

Naming convention:

Name an outbreak using the following format, replacing italicized items as appropriate, based on the year of first case onset:

Year of outbreak<sup>1</sup> *jurisdiction* COVID-19 *facility name*<sup>2</sup> (*outbreak number*)<sup>3</sup>

Example: 2022 Clark COVID-19 Johnson’s Care Center 3

<sup>1</sup>Year of outbreak: This is the year when the current outbreak started.

<sup>2</sup>Facility unique id: For facilities with multiple locations, add city, street name, or facility number as appropriate

<sup>3</sup>Outbreak number: If there are multiple outbreaks at the same facility, add the number of outbreaks since the start of the pandemic. This number does not start over for a new year.

Do NOT put any PHI in outbreak names, including names, house numbers, or any other personally identifiable information.

- a. Complete the “COVID-19 Outbreak” question package. Critical fields in the COVID-19 Outbreak question package include:
  - i. Accountable County
  - ii. Lead Investigator Information
  - iii. Site category and subcategory

- iv. Site name and address
  - v. Earliest case symptom onset date (if known)
  - vi. Aggregate case count
- b. Provide information about outbreak cases by completing the case count fields in the “COVID-19 Outbreak- Summary Numbers” question package ([see link for further instructions](#)). Cases arising from secondary transmissions of cases associated with the cluster should not be counted.
- c. In addition to adding the total case count to the Summary Numbers Section in the “COVID-19 Outbreak” question package, you can also link an existing WDRS case to the outbreak event (detailed instructions available on the [WDRS User Group SharePoint](#)) if this information is known:
- i. Open the outbreak event
  - ii. Click on **(View)** for ‘linked event(s)/contact(s)’
  - iii. Change operation to ‘Link to Existing Event’
  - iv. Click on button to Select Event
  - v. Navigate to the WDRS case (person) by entering name, birthdate or WDRS number and click to select the person
  - vi. Change Link Type to appropriate link type “Staff, Student, etc.” or “Cluster” if link type is unknown.
  - vii. Go to bottom of page and click ‘Save’
  - viii. Repeat steps i-vii for each WDRS case (person) being linked to the outbreak event
- d. If you would like to link multiple cases to an outbreak event in WDRS please fill out the following csv and send the completed csv to [COVID19WDRSDevs@doh.wa.gov](mailto:COVID19WDRSDevs@doh.wa.gov).
- i. [RosterTemplate link cases to outbreaks.csv \(sharepoint.com\)](#)
  - ii. Column 1: Case ID, Column 2: Outbreak Event ID, Column 3: Link Type (i.e., Staff, Student, Resident/Inmate, Cluster, etc.).
- e. For notification of cross-border (multi-county, state, or country) outbreaks, LHJs can contact the WA DOH Non-healthcare Congregate Settings (NHCS) team at [nhcs-covid@doh.wa.gov](mailto:nhcs-covid@doh.wa.gov). If needed, NHCS will reach out to the WA DOH Travel Epi Team.

Additional resources for outbreak investigations are below:

- An employer must not reveal confidential employee health information (CFR [Code of Federal Regulations] § 1630.14 Medical examinations and inquiries specifically permitted). See [US Equal Employment Opportunity Commission guidance](#) for more information.
- Local health jurisdictions and tribal public health staff can request on-site vendor testing for outbreaks supported by the WA DOH by submitting [this outbreak testing request form](#). Examples of appropriate facilities that can request this

resource include homeless shelters, long term care facilities, and child care facilities.

- Resources to code facility type and subtype are available from the [US Census Bureau](#) and the [US Bureau of Labor Statistics](#).
- To report a workplace safety hazard or complaint, [contact Washington Department of Labor and Industries](#). Employees at the affected worksite can report the hazard or complaint directly to Labor and Industries or LHJ staff can report as well. For an issue that does not require immediate attention, LHJ staff can also contact regional Labor and Industries staff for assistance.

## 6. INFECTION PREVENTION

### A. Healthcare Settings

For infection control guidance for healthcare professionals see [COVID-19 Infection Prevention in Healthcare Settings](#) and [CDC guidance](#).

### B. Community-wide Measures

#### 1. Workplace measures

Washington State Department of Labor & Industries provides [guidance for preventing COVID-19 in work settings](#).

See also [OSHA guidance](#) and [CDC guidance for businesses](#).

For WA DOH guidance for businesses, see: [Guidance for Non-Healthcare Businesses and Organizations during COVID-19](#)

#### 2. Individual actions

##### Information on masks

See WA DOH [mask guidance](#). Also check for local recommendations and requirements in a county or city. Health care settings can access personal protective equipment and source control guidance in [COVID-19 Infection Prevention in Healthcare Settings](#). WA DOH recommends that people mask indoors in certain non-health care congregate settings as an enhanced mitigation measure in response to outbreaks or elevated disease levels; see [COVID-19 Mask Guidance](#) for details. Mask use is not recommended for children less than two years of age. Washington State Department of Labor and Industries may have additional requirements (see Workplace measures above).

N95 masks offer the most protection, followed by international standard respirators such as KN95s or KF94s, surgical or procedure-type masks, and then cloth masks. Masks should not have a vent or exhaust port. Mask effectiveness can be increased by double masking (using a cloth mask over a disposable mask), the use of a mask brace, or knotting and tucking the ear loops of a disposable mask; KN95 or N95 masks should not be combined with other masks. Face shields alone do not substitute for face masks. See [WA DOH mask guidance](#) for more information.

For background see:

[CDC MMWR](#)

[CDC Science Brief](#)

For recommendations about choice and handling of masks see:

[CDC guidance on types of masks](#)

For local health jurisdictions who need to order PPE see [WA DOH guidance](#)

**Information for people who have symptoms of COVID-19**

Follow the guidance in [what to do when you are sick with COVID-19 or another respiratory virus](#). Stay home if fever, cough or other [symptoms](#) of COVID-19 develop. Keep apart from others (if possible, use separate sleeping and bathroom areas). Do not share dishes, towels, or bedding. Before visiting a healthcare setting, tell them of any fever or respiratory symptoms. People should not attend a gathering or be in public settings (except for essential medical care) if they are in isolation with COVID-19 or experiencing symptoms of COVID-19.

**Information for people who have been exposed to someone with COVID-19**

If exposed to someone with COVID-19, it can be especially helpful to use respiratory virus [prevention strategies](#), such as [wearing masks](#), taking [steps to improve air flow and filtration](#), practicing good [hand hygiene](#), [cleaning regularly](#), [physical distancing](#), and/or [testing](#). If symptoms develop, take the steps described above to prevent spreading respiratory virus illness to others, get tested if accessible, and get treatment if eligible. Quarantine is no longer recommended for the general population but may be considered in high-risk settings under certain circumstances.

**C. Travel Measures**

Staying [up-to-date with COVID-19 vaccinations](#) can help protect against SARS-CoV-2 infection and especially against severe disease. Precautions such as mask use, social distancing, and hand hygiene are recommended to help reduce the risk of infection. Masks are recommended for people who are in indoor areas of public transportation including airplanes, ships, ferries, trains, subways, taxis, or ride-shares (see [CDC guidance](#)).

People who are experiencing symptoms consistent with COVID-19, test positive for COVID-19, or were recently exposed to someone with COVID-19 should follow [CDC recommendations for travel](#).

Those planning travel should check for all travel requirements and recommendations, especially for international travel requirements.

**ADDITIONAL RESOURCES****Public Health Guidance for Healthcare Providers:**

[WA DOH guidance](#)

[COVID-19 Infection Prevention in Healthcare Settings](#)

[CDC guidance](#)

**Public Health Guidance for Businesses and Other Sites**

[WA DOH recommendations](#) (general, businesses and workers, school, childcare, and farm and agricultural workers)

[CDC guidance materials](#) for multiple settings including workplaces, schools, child care, colleges, and gatherings and community events

WA [Labor & Industry guidance](#)

WA [Confidential L&I consultation information](#)

### Guidance for Public Queries

[WA DOH guidance on what to do when you are sick with COVID-19 or another respiratory virus](#)

[WA DOH COVID-19 FAQs](#)

## ACKNOWLEDGEMENTS

This document was created from [information from the Centers for Disease Control and Prevention](#)

## UPDATES

**May 2020:** document created

**June 5, 2020:** Appendix 2 added

**June 16, 2020:** LTC outbreak definition expanded to include single case among resident or staff

**July 26, 2020:** added symptoms and complications; added comments of use of cloth masks in the definition of a close contact and in Appendices; self-collection of nasal swabs allowed without medical provider observation; added information for sources of free or low cost testing; added information about homelessness; changed return to work criteria; updated discontinuation of transmission-based precautions in healthcare settings; limited contact tracing for Probable cases to household members; ending isolation and quarantine added to Appendix 1 Section D; expanded Appendix 2

**August 13, 2020:** case definition (Section 3) includes new olfactory disorder or new taste disorder as a consistent symptom, case definition includes presumptive laboratory evidence as antigen test in respiratory specimen, case definition includes antibody test or detection of antigen by immunocytochemistry in autopsy specimen as supportive laboratory evidence, presumptive laboratory evidence (positive antigen) alone is sufficient for a Probable classification, case definition epi linkage no longer includes travel or residence to an area with sustained ongoing transmission; added specific approach for a suspected false positive result (Section 4A); added details about reinfection (Section 4A); includes new reporting requirements in WAC 246-101-017 (Section 5); updated ending transmission-based precautions (Section 6B); updated recommendations for ending isolation (Appendix 1 Section D)

**August 25, 2020:** case definition (Section 3) includes new olfactory disorder or new taste disorder as a consistent symptom, case definition includes presumptive laboratory evidence as antigen test in respiratory specimen, case definition includes antibody test or detection of antigen by immunocytochemistry in autopsy specimen as supportive laboratory evidence, presumptive laboratory evidence (positive antigen) alone is sufficient for a Probable classification, case definition epi linkage no longer includes travel or residence to an area with sustained ongoing transmission; expanded case investigation for a Probable case with an antigen positive test results to be the same as for a Confirmed case; CDC dropped the recommendation that returning international travelers have a 14 day quarantine period.

**October 9, 2020:** specified that laboratories should report negative results; LHJ outbreak reporting options added (Section 1C4); Section 2 updated information on potential airborne transmission and on recurrent infection; updated information on animal infections; Section 4B interpretation of laboratory tests includes potential false positive and false negative results, investigating a case of potential reinfection, and optimal timing for specimen collection; Infection Prevention from Section 5 was separated into a new document; outbreak definitions were summarized in Section 5B; Section 6 specified that incoming international travelers do not

need public health monitoring; Appendices on case investigation and on long-term care or workplace cluster investigation were separated into new documents.

**November 3, 2020:** Section 2 specifies contagious period; close contact specified as *cumulative* 15 minutes of contact *over 24 hours*; Section 4C update for investigation of a reinfection; section 5B school outbreak definition change to include the definition of a close contact

**December 11, 2020:** Section 2I includes contact information for acquiring non-vaccine therapeutics; Section 4B adds link to CDC algorithm for PCR follow-up testing of antigen results; Section 4C3 added to include CDC recommendations for confirmatory testing; Section 4C4 about delays between symptoms and testing was shortened and clarified; Section 4C7 summarizes investigation of suspected reinfection; Section 6B has updated community-wide and prevention measures in Washington – Section 6B2 states face shields are not masks, cloth masks are not medical grade protection, and the risk of a gathering should be evaluated; Section 6C updates travel measures with CDC recommendation for international travelers to test before and after travel and to self-quarantine, and for domestic travelers to consider testing

**December 22, 2020:** recommends genomic analysis for suspected variants sections 2A and 4B; link for influenza testing in long-term care added Section 4C8; attendance at private gatherings recommended to be capped at 200, Section 5B3; updated travel guidance related to countries with circulating variants (Section 6C)

**February 18, 2021:** description of illness expanded to include persisting symptoms (section 2B); case definition added for MIS-C (Section 3); update that vaccination will not give a positive PCR or antigen result (Section 4); added criteria for genomic analysis of specimens (Section 4C7); outbreak naming convention for 2021 provided (Section 5B3); CDC masking recommendations (Section 6B1); mask requirements for any travel within the country (Section 6); testing requirements for arriving travelers and reporting ill cases who attempt to travel or who traveled (Section 6C)

**March 24, 2021:** updated protocol for suspected reinfection (Section 4B7); additional CDC links for mask recommendations (Section 6B1); updated mask recommendations including for fully vaccinated persons (Section 6B2); updated travel recommendations include testing before and after travel, and self-quarantine for seven days after a negative result after travel (Section 6C)

**April 5, 2021:** update on post-COVID conditions, long-term sequelae and multisystem inflammatory condition (Section 2B); for travel within the United States, fully vaccinated travelers do not need testing before or after travel and do not need to self-quarantine (Section 6C); for international travel fully vaccinated travelers do not need to self-quarantine but should be tested before and after the flight (Section 6C)

**May 17, 2021:** transmission information updated (Section 2E), updated recommendations for masking for fully vaccinated persons (Section 6B)

**June 22, 2021:** updated recommendations for interpreting antigen test results (Section 4C); updated mask recommendations (Section 6B)

**July 1, 2021:** updated masking, travel and business recommendations (Sections 6B and 6C)

**July 19, 2021:** updated masking guidance (Section 6B2).

**August 30, 2021:** updated case definition (Section 3), added links to therapeutic references (Section 2H)

**September 22, 2021:** updated resources for monoclonal antibodies (Section 2H)

**October 18, 2021:** updated Probable case definition on front page; updated SARS-CoV-2 tests (Section 4B), new definition of a school-associated outbreak and cluster (Section 5B)

**October 28, 2021:** case definition updated on front page

**November 22, 2021:** case definition further updated on front page

**February 22, 2022:** testing section streamlined (Section 4); outbreak case definitions updated (Section 5B1); travel measures updated (Section 6C)

**March 2022:** updated masking section

**June 2022:** undated travel information removing mask requirements

**August 2022:** updated outbreak definition for schools and child care (Section 5B)

- November 2022:** Incubation period updated to reflect Omicron-specific data. Available treatments updated. Updated with current guidelines for isolation and for people exposed to someone with COVID-19. Updated with current public health practices for COVID-19 (e.g., contact tracing no longer routine in most settings). Outbreak reporting process updated. Added discussion of COVID-19 rebound. Updated COVID-19 testing guidance to reflect current use of self-tests and use of antigen tests within 90 days of a prior infection. Updated SARS-CoV-2 sequencing guidance. Updated school and childcare outbreak definition.
- December 2022:** updated legal reporting requirements (Section 1B) in accordance with 2023 WAC revision
- January 2023:** updated case definition in accordance with updated CSTE case definition
- January 2023:** updated reporting requirements (1B) to include requests from provisional reporting letter
- February 2023:** updated non-healthcare congregate setting and correctional facility outbreak definitions, updated links to guidance for healthcare settings, and removed information about monoclonal antibodies as these treatments are no longer available
- April 2023:** updated mask guidance and updated links to DOH health care guidance
- May 2023:** added death classification (Section 3C), revised laboratory reporting Section 1B, and updated link to CDC travel guidance (Section 6C)
- September 2023:** updated the non-health care congregate settings outbreak definition (Section 5B) and removed correctional facility-specific outbreak definition as it is now included in the general non-healthcare congregate settings outbreak definition
- December 2023:** updated routine case investigation (Section 5A) to remove link to sunset guidance, added link to the outbreak testing request form to Section 5B, and updated link to WDRS Outbreak Events Training Guide in Section 5B; updated links to surveillance data in Section 2C; updated link to CDC MIS-C reporting guidance in Section 3B
- April 2024:** updated links to isolation and exposure guidance on the cover sheet; updated isolation recommendations and guidance links in Section 2G; updated guidance links in Section 5A; updated information for people with symptoms of or exposed to COVID-19 in Section 6B; updated links to guidance in Additional Resources section
- July 2024:** added Appendix A: MIS-C

**APPENDIX A: Multisystem Inflammatory Syndrome in Children (MIS-C)****PUBLIC HEALTH ACTION**

Suspected MIS-C cases should be reported to the LHJ and DOH; health care provider and health care facility reporting is recommended but not required. Determine if the case meets the case definition based on review of clinical, laboratory, and epidemiologic linkage information. Enter case investigation information in WDRS as a Multisystem Inflammatory Syndrome in Children (MIS-C) disease event.

**DISEASE REPORTING****A. Purpose of Reporting and Surveillance**

1. To understand the epidemiology of MIS-C in Washington State.

**B. Legal Reporting Requirements**

1. There are currently no legal reporting requirements for MIS-C in Washington. The following reporting is recommended:
  - a. Health care providers and Health care facilities should report suspected cases among patients younger than 21 years of age meeting MIS-C criteria described in the case definition to the local or Tribal health jurisdiction of the patient's residence.
  - b. Local health jurisdictions (LHJs) are requested to report cases to the Washington State Department of Health (WA DOH) Office of Communicable Disease Epidemiology (CDE).

**C. Local Health Jurisdiction Investigation Responsibilities**

1. Begin case investigation by collecting medical records, laboratory records, and immunizations records (COVID-19 vaccination history).
2. Create a 'Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19' event in WDRS and enter case data using the [CDC MIS-C Reporting Form](#) as a guide if needed. If a Coronavirus event also exists in WDRS for the patient, the event may be copied when creating the MIS-C event to carry over demographic and laboratory entries.
3. WA DOH CDE staff are available to support MIS-C investigations as needed.

**THE DISEASE AND ITS EPIDEMIOLOGY****A. Description of Illness**

Multisystem inflammatory syndrome in children (MIS-C) is a rare but serious complication associated with COVID-19. MIS-C is a dysregulated immune response to SARS-CoV-2 infection and is not transmissible. Symptoms generally appear 2-6 weeks after SARS-CoV-2 infection, and it is common that children with MIS-C would have had few or no symptoms of COVID-19. MIS-C patients present with a persistent fever, abdominal pain, vomiting, diarrhea, skin rash, mucocutaneous lesions and, in severe cases, hypotension and shock.

Patients have elevated inflammatory markers and, in a majority of cases, elevated cardiac enzymes which are a sign of heart damage, stress, or inflammation.

## B. Treatment

Treatment is directed care against the underlying inflammatory process. For additional information, please refer to the following MIS-C treatment guideline: [National Institutes of Health Therapeutic Management of Hospitalized Pediatric Patients with MIS-C](#).

## C. Vaccines

COVID-19 vaccination is the best protection against MIS-C. Two studies have demonstrated that two doses of Pfizer-BioNTech COVID-19 vaccine had a greater than 90% estimated effectiveness at preventing MIS-C. CDC and FDA require that MIS-C occurring after COVID-19 vaccination be reported to the [Vaccine Adverse Event Reporting System \(VAERS\)](#).

## D. MIS-C in Washington

MIS-C surveillance in Washington State began in May 2020, after MIS-C was first recognized as a post-infectious condition associated with COVID-19. Peaks in MIS-C cases have typically occurred 4 weeks after peaks in COVID-19 cases. The highest incidence of MIS-C in Washington was observed in 2021, when 93 cases were identified. Since then, case numbers have trended downward. For more detailed and current information, see WA DOH's monthly report: [Multisystem Inflammatory Syndrome in Children Associated with COVID-19 in Washington State](#).

The decrease in MIS-C cases observed in 2023 is not fully understood but might be associated with increasing levels of immunity from vaccination and infection, as well as decreased immunogenicity associated with Omicron and Omicron subvariants that have been circulating in Washington since early 2022.

## CASE DEFINITION

### A. MIS-C Case Definition (2023)

#### Clinical Criteria

An illness in a person aged <21 years characterized by all of the following, in the absence of a more likely alternative diagnosis\*:

- Subjective or documented fever (temperature  $\geq 38.0^{\circ}$  C) AND
- Clinical severity requiring hospitalization or resulting in death AND
- Evidence of systemic inflammation indicated by C-reactive protein  $\geq 3.0$  mg/dL (30 mg/L) AND
- New onset manifestations in at least two of the following categories:
  1. Cardiac involvement indicated by:
    - Left ventricular ejection fraction <55%, OR
    - Coronary artery dilatation, aneurysm, or ectasia, OR

- Troponin elevated above laboratory normal range, or indicated as elevated in a clinical note
2. Mucocutaneous involvement indicated by:
    - Rash, OR
    - Inflammation of the oral mucosa (e.g., mucosal erythema or swelling, drying or fissuring of the lips, strawberry tongue), OR
    - Conjunctivitis or conjunctival injection (redness of the eyes), OR
    - Extremity findings (e.g., erythema [redness] or edema [swelling] of the hands or feet)
  3. Shock (clinician documentation of shock meets this criterion)
  4. Gastrointestinal involvement indicated by:
    - Abdominal pain, OR
    - Vomiting, OR
    - Diarrhea
  5. Hematologic involvement indicated by:
    - Platelet count <150,000 cells/ $\mu$ L, OR
    - Absolute lymphocyte count (ALC) <1,000 cells/ $\mu$ L

*\*If documented by the clinical treatment team, a final diagnosis of Kawasaki Disease should be considered an alternative diagnosis.*

### **Laboratory Criteria**

Confirmatory laboratory evidence includes the detection of SARS-CoV-2:

- RNA in a clinical specimen<sup>†</sup> up to 60 days prior to or during hospitalization, or in a post-mortem specimen using a diagnostic molecular amplification test OR
- Specific antigen in a clinical specimen<sup>†</sup> up to 60 days prior to or during hospitalization, or in a post-mortem specimen, OR
- Specific antibodies<sup>‡</sup> in serum, plasma, or whole blood associated with current illness resulting in or during hospitalization

*<sup>†</sup>Positive molecular or antigen results from self-administered testing using over-the-counter test kits meets laboratory criteria.*

*<sup>‡</sup>Includes a positive serology test regardless of COVID-19 vaccination status. Detection of anti-nucleocapsid antibody is indicative of SARS-CoV-2 infection, while anti-spike protein antibody may be induced either by COVID-19 vaccination or by SARS-CoV-2 infection.*

### Epidemiologic Linkage Criteria

Close contact<sup>§</sup> with a confirmed or probable case of COVID-19 disease in the 60 days prior to hospitalization.

*§Close contact is generally defined as being within 6 feet for at least 15 minutes (cumulative over a 24-hour period). 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.<sup>1</sup>*

*<sup>1</sup>See section 2E for more detailed information about defining exposure.*

### Vital Records Criteria

A person aged <21 years whose death certificate lists MIS-C or multisystem inflammatory syndrome as an underlying cause of death or a significant condition contributing to death.

### Case Classifications:

- *Confirmed:* Meets the clinical criteria AND the confirmatory laboratory evidence
- *Probable:* Meets the clinical criteria AND the epidemiologic linkage criteria
- *Suspect:* Meets the vital records criteria

## ROUTINE CASE INVESTIGATION

WA DOH uses two methods to identify MIS-C cases in Washington. Providers and facilities report cases directly to public health, and possible MIS-C cases are identified in the Rapid Health Information Network (RHINO) database of healthcare visits. WA DOH reports patients identified by RHINO to LHJs.

### A. Evaluate the Diagnosis

When a suspected MIS-C case is reported, review the medical record, labs, and the immunization record for clinical and laboratory information to determine whether the case meets the case definition detailed above and to gather information for the reporting form to improve our understanding of the epidemiology of MIS-C.

- Review labs to determine if they meet laboratory criteria.
- Review clinical presentation and physical exam findings.
- If there is no lab evidence of COVID-19 infection, review the medical record to determine if they meet the epidemiologic linkage criteria. This may be found anywhere in the medical record, but it may be especially helpful to look in the history and physical section and the admission note.
- If deceased, review death certificate to determine if they meet the suspect case definition.

- An evaluation for a possible alternative diagnosis is important, these may include an acute viral infection such as SARS-CoV-2, influenza, adenovirus or acute viral myocarditis or Kawasaki Disease.

### **B. Manage the Case**

- MIS-C is not infectious, but SARS-CoV-2 is infectious. See the main COVID-19 infection guideline above for information on preventing COVID-19 transmission.
- Post-illness Vaccine Recommendations: Vaccinate at least 90 days after MIS-C diagnosis and after clinical recovery has been achieved, including return to baseline cardiac function. For more detailed information, see CDC guidance on MIS-C and vaccination: [Considerations for initiation COVID-19 vaccination in people with a history of MIS-C.](#)

### **ADDITIONAL RESOURCES**

[CDC MIS-C Case Report Form](#)

[CDC MIS-C Case Report Form Guidance Document](#)

[American Academy of Pediatrics Multisystem Inflammatory Syndrome in Children \(MIS-C\)](#)

[National Institutes of Health Therapeutic Management of Hospitalized Pediatric Patients with MIS-C](#)

To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [doh.information@doh.wa.gov](mailto:doh.information@doh.wa.gov).