
# COVID-19

Also known as
Severe Acute Respiratory Syndrome Coronavirus 2 or SARS-CoV-2

## Investigation Guidance for New Jersey Local Health Departments

**April 17, 2024**

# 1. THE DISEASE AND ITS EPIDEMIOLOGY

## A. Etiologic Agent

Coronavirus disease 2019, or COVID-19, first discovered in December 2019 in Wuhan, China, is an infectious disease caused by a virus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).

## B. Clinical Description

Acute illness: The clinical presentation of COVID-19 varies widely, ranging from asymptomatic infection to critical illness. Symptoms may vary during the course of illness and based on the circulation of different SARS-CoV-2 variant strains. Infections occur in people who never develop symptoms (asymptomatic) and in patients not yet symptomatic (pre-symptomatic).

Signs & Symptoms: People with COVID-19 may experience one or more of the following: fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, nasal congestion or rhinorrhea, nausea or vomiting, and diarrhea. Symptoms may change throughout the illness, and many symptoms may overlap with other viral respiratory illnesses, such as influenza and respiratory syncytial virus (RSV). Some patients with COVID-19 progress to dyspnea and severe disease about one week after symptom onset, and could require hospitalization, supplemental oxygen, intensive care unit admission, and mechanical ventilation. It is important to closely monitor those who may be at higher risk of severe illness, such as older adults, persons with disabilities, individuals with immunocompromising conditions, and those who have comorbid medical conditions.

Reference: Clinical Presentation | Clinical Care Considerations | CDC

Disease Severity: The National Institutes of Health (NIH) has grouped SARS-CoV-2 infection into five categories based on severity of illness:

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| **Asymptomatic or Pre-symptomatic infection** | People who test positive for SARS-CoV-2 using a virologic test (i.e., a nucleic acid amplification test [NAAT] or an antigen test) but who have no symptoms that are consistent with COVID-19. |
| **Mild Illness** | People who may have any of the various signs and symptoms of COVID-19 (e.g., fever, cough, sore throat, headache, muscle aches, nausea, vomiting, diarrhea, loss of taste and smell, etc.) but who do not have shortness of breath, dyspnea, or abnormal chest imaging. |
| **Moderate Illness** | People who have evidence of lower respiratory disease during clinical assessment or imaging and who have an oxygen saturation (SpO2) ≥94% on room air at sea level. |

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| **Severe Illness** | People who have oxygen saturation <94% on room air at sea level, a ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO2/FiO2) <300 mm Hg, a respiratory rate >30 breaths/min, or lung infiltrates >50% |
| **Critical Illness** | People who have respiratory failure, septic shock, and/or multiple organ dysfunction |

Reference: Clinical Spectrum | COVID-19 Treatment Guidelines (nih.gov)

Risk Factors for Severe Illness: The strongest risk factor identified for severe COVID-19 outcomes is older age. Being unvaccinated or not being up to date with COVID-19 vaccines increases risk for severe disease, as does immunocompromise/immunosuppression and certain other medical conditions. Additionally, racial, ethnic, and socioeconomic disparities have occurred in the pandemic, with racial and ethnic minority groups having higher rates of infection, hospitalization, and death from COVID-19.

Other risk factors for severe outcomes of COVID-19 include, but are not limited to:

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| Asthma | HIV |
| Cancer (hematologic malignancies) | Dementia |
| Cerebrovascular disease | Diabetes mellitus Types 1 & 2 |
| Certain chronic lung diseases | Obesity |
| Certain chronic liver diseases | Physical inactivity |
| Certain Heart Conditions | Pregnancy & recent pregnancy |
| Certain mental health conditions | Primary immunodeficiencies |
| Chronic kidney disease (on dialysis) | Smoking (current & former) |
| Corticosteroids & other immunosuppressive medications | Solid organ or blood stem cell transplantation |
| Cystic Fibrosis | Tuberculosis |

Reference: Underlying Medical Conditions Associated with Higher Risk for Severe COVID-19: Information for Healthcare Professionals | CDC
See also: People with Certain Medical Conditions | CDC

Multisystem Inflammatory Syndrome (MIS): MIS is a rare but serious condition associated with COVID-19 in which different organ systems become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. It can affect both children (MIS-C) and adults (MIS-A). MIS can lead to longer term symptoms due to unresolved complications from the illness. CDC continues to conduct surveillance and investigations into MIS cases to help determine why some people develop MIS after having COVID-19 or contact with someone with COVID-19, while others do not.

Some signs and symptoms of MIS include:

- Ongoing fever
- Rash
- Abdominal pain, diarrhea, or vomiting
- Inflammation of the eyes, lips, or tongue
- Redness/swelling of hands or feet

Reference: About Multisystem Inflammatory Syndrome (MIS) | CDC
See also: Multisystem Inflammatory Syndrome (MIS) | NJDOH

Long COVID: Some patients who have been infected with SARS-CoV-2, the virus that causes COVID-19, develop new, recurring, or ongoing symptoms and clinical findings four or more weeks after infection, called Long COVID or Post-COVID Conditions (PCC). Long COVID can occur in patients who have had varying degrees of illness during acute infection, including those who had mild or asymptomatic infections. Medical and research communities are still learning about these post-acute symptoms and clinical findings. Since July 2021, Long COVID has been recognized as a condition that could constitute a disability under the Americans with Disabilities Act (ADA).

See also: Guidance on "Long COVID" as a Disability Under the ADA, Section 504, and Section 1557 |HHS

Commonly reported new or ongoing symptoms include:

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| Dyspnea or increased respiratory effort | Abdominal pain |
| Fatigue | Diarrhea |
| Post-exertional malaise and/or poor endurance | Insomnia and other sleep difficulties |
| "Brain fog" or cognitive impairment | Fever |
| Cough | Lightheadedness |
| Chest pain | Impaired daily function and mobility |
| Headache | Pain |
| Palpitations and/or tachycardia | Rash (i.e., urticaria) |
| Arthralgia | Mood changes |
| Myalgia | Alterations in taste (dysgeusia) |
| Paresthesia | Partial or complete loss of smell (anosmia) |
| Menstrual cycle irregularities | Erectile dysfunction |

Reference: Post-COVID Conditions: Information for Healthcare Providers (cdc.gov)
See also: Long COVID or Post-COVID Conditions | CDC

Treatment: Treatment is a CDC Core Prevention Strategy to decrease risk of severe outcomes from respiratory viruses, including COVID-19. Most people with COVID-19 experience asymptomatic or mild illness that does not warrant medical intervention, or mild to moderate illness that can be managed in the outpatient setting. Many of these individuals can benefit from supportive care and symptomatic treatment, including antipyretics, analgesics, and antitussives.

For those individuals who have mild to moderate illness and are more at risk for severe outcomes (see above), the National Institutes of Health recommends treatment to reduce chances of severe illness, hospitalization, and death. Medications to treat COVID-19 must be prescribed by a healthcare provider and started as soon as possible after diagnosis to be effective. Anyone at risk of developing severe illness should speak with their healthcare provider ahead of time about a plan for treatment in the event they become infected with SARS-CoV-2.

The Food and Drug Administration (FDA) has authorized treatments for COVID-19 for non-hospitalized persons that are at high risk of severe illness as well as for those who are hospitalized. As the virus mutates, some treatments may no longer be effective.

- **Antiviral treatments** target specific parts of the virus to stop it from multiplying in the body, helping to prevent severe illness and death. Antivirals currently authorized for outpatient use include oral Paxlovid (nirmatrelvir and ritonavir), Veklury (remdesivir) for adult and pediatric patients via intravenous infusion x 3 days, and oral Lagevrio (molnupiravir) as an alternative option for those who cannot receive Paxlovid or Veklury.

- **Monoclonal antibodies** can help the immune system recognize and respond more effectively to the virus. However, many monoclonal antibodies are no longer effective as the SARS-CoV-2 virus has mutated and may not be recommended for use depending on currently circulating variants.

Hospitalized patients with COVID-19 may be given antivirals, monoclonal antibodies, and other types of treatments, depending on illness severity. These could include medications to treat the virus, reduce an overactive immune response, or treat COVID-19 complications.

The National Institutes of Health (NIH) has published evidence-based guidelines on testing, treatment, and management of patients with COVID-19. The recommendations are based on scientific evidence and expert opinion and had their latest update in February 2024. Clinicians should refer to NIH COVID-19 Treatment Guidelines for up-to-date recommendations regarding eligibility, effectiveness of therapeutics, rationale for treatment of sub-populations, specific drug classes, general management, and therapeutic management. These guidelines will be available for download until August 16, 2024, after which the NIH website will be shut down.

References: Clinical Course: Progression, Management, and Treatment | CDC), COVID-19 Treatments and Medications | CDC

### C. Reservoirs

The SARS-CoV-2 virus is a betacoronavirus, like MERS-CoV and SARS-CoV and is thought to have originated in bats. The risk of animals spreading SARS-CoV-2 to humans is considered low, but the virus can spread from people to animals during close contact. People with suspected or confirmed COVID-19 should avoid contact with animals, including pets, livestock, and wildlife while infectious. More studies and surveillance are needed to track variants and mutations and to understand how SARS-CoV-2 spreads between people and animals.

Reference: Animals and COVID-19 | CDC

### D. Mode of Transmission

The principal mode by which people are infected with SARS-CoV-2 is through exposure to respiratory fluids carrying infectious virus. Infectious exposures to respiratory fluids carrying SARS-CoV-2 occur in three principal ways (not mutually exclusive):

1. Inhalation of air carrying small droplets and aerosol particles that contain the SARS-CoV-2 virus. Risk of transmission is greatest within three to six feet of an infectious source where the concentration of droplets and particles is greatest.

2. Deposition of SARS-CoV-2 virus droplets and particles onto exposed mucous membranes of the eyes, nose, or mouth (i.e., "splashes and sprays", such as being coughed on). The risk of transmission is greatest close to an infectious source where the concentration of these exhaled droplets and particles is greatest.

3. Touching the eyes, nose, or mouth with hands that have SARS-CoV-2 virus particles on them or from touching inanimate surfaces contaminated with virus.

Once infectious droplets and particles are exhaled, they move outward from the source. The risk for infection decreases with increasing distance from the source and increasing time after exhalation.

Close Contact: COVID-19 is thought to spread mainly through close contact from person to person, including between people who are physically near each other (within about 6 feet). For determining exposure to SARS-CoV-2, CDC defines close contact as:

a) Someone who was within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period (for example, three individual 5-minute exposures for a total of 15 minutes). An infected person can spread SARS-CoV-2 starting from 2 days before they have any symptoms (or, for asymptomatic patients, 2 days before the positive specimen collection date)

   OR

b) Direct contact with infectious secretions from a person with COVID-19. Infectious secretions may include sputum, serum, blood, and respiratory droplets (e.g., being coughed or sneezed on).

***Note:*** *Classification of an individual as a close contact is based on many factors and should be assessed on a case-by-case basis. Factors to consider when defining close contact include proximity (closer distance likely increases exposure risk), the duration of exposure (longer exposure time likely increases exposure risk), whether the infected individual has symptoms (the period around onset of symptoms is associated with the highest levels of viral shedding), if the infected person was likely to generate respiratory aerosols (e.g., was coughing, singing, shouting), and other environmental factors (crowding, adequacy of ventilation, whether exposure was indoors or outdoors).*

Reference: Clinical Presentation | Clinical Care Considerations | CDC

**E. Incubation Period**

Data suggest that incubation periods may differ by variant of the SARS-CoV-2 virus. The estimated incubation period can range from 2 to 14 days, with a mean incubation period of 6.5 days early in the pandemic, and a median incubation period of 3-4 days found more recently during circulation of the Omicron variant.

Reference: Clinical Presentation | Clinical Care Considerations | CDC

**F. Period of Communicability or Infectious Period**

People infected with SARS-CoV-2 can transmit the virus while they are asymptomatic or pre-symptomatic, with infectiousness peaking from just prior to symptom onset to a few days after symptom onset. The virus can be shed for up to ten days in people with mild to moderate illness, and even longer (up to 20 days) in cases of severe to critical illness and in immunocompromised individuals.

Reference: Clinical Presentation | Clinical Care Considerations | CDC

**G. Epidemiology**

The COVID-19 pandemic has increased tremendously since cases were first reported in Wuhan, China in December 2019. As of early March 2024, the World Health Organization (WHO) reported over 774 million cases of COVID-19 globally, including more than 7 million deaths.

Demographics & Risk Factors: All ages are at risk for SARS-CoV-2 infection, but the probability of severe illness is higher in people aged ≥65 years, those living in a nursing home or long-term care facility, those who are unvaccinated (or have a poor immune response to the vaccine), and those with chronic medical conditions (see People with Medical Conditions | CDC).

U.S. data show that racial and ethnic minorities and other marginalized groups experience higher rates of COVID-19, subsequent hospitalization, and death. Factors that contribute to the increased burden of COVID-19 in these populations may include lack of access to health care and COVID-19 treatments, increased risk of exposure (due to work environments or living situations with higher exposure and/or inability to physically distance), economic inequality, and neighborhood disadvantage. Structural inequalities in society contribute to health disparities for racial and ethnic minority groups, including higher rates of comorbid conditions (such as cardiac disease, diabetes, hypertension, obesity, pulmonary diseases), which further increase the risk of developing severe COVID-19.

Reference: Overview of COVID-19 | COVID-19 Treatment Guidelines (nih.gov)

Variants: COVID-19 cases in New Jersey initially peaked in early to mid-April 2020 and then declined and plateaued over the summer 2020. A second wave of COVID-19 cases caused by the Alpha variant began in November 2020 and continued into April 2021. A third wave began in autumn of 2021 (Delta variant) and was quickly overtaken by the Omicron variant, which peaked in early 2022, with over 50,000 confirmed new COVID-19 cases reported daily in early January. New Jersey COVID-19 data is posted online at Department of Health | Communicable Disease Service | COVID-19 Weekly Surveillance Reports (state.nj.us)

Viruses constantly change through mutation, and new variants of a virus are expected to occur over time. Sometimes new variants emerge and disappear. Other times, new variants emerge and persist. Multiple variants of the virus that causes COVID-19 have been documented in the United States and globally during this pandemic. CDC characterizes variants as variants of interest (VOI), variants of concern (VOC), variants of high consequence (VOHC), and variants being monitored (VBM) (Reference: SARS-CoV-2 Variant Classifications and Definitions (cdc.gov). Data is available to show the current proportion of variant strains circulating nationally (CDC COVID Data Tracker: Variant Proportions) and in New Jersey (Department of Health | Communicable Disease Service | COVID-19 Weekly Surveillance Reports (state.nj.us).

Some variants spread more easily and quickly than other variants, which may lead to more cases of COVID-19. Even if a variant causes less severe disease in general, an increase in the overall number of cases could cause an increase in hospitalizations, put more strain on healthcare resources and potentially lead to more deaths. Some variants may also result in increased illness severity or be resistant to therapeutics or vaccines. Slowing the spread of the virus by protecting yourself and others can help slow the emergence of new variants (see What You Need to Know About Variants | CDC).

# 2. CASE AND OUTBREAK DEFINITIONS

Case definitions are adapted from CSTE updated case definitions 22-ID-01 (August 2022).

### A. Clinical Criteria

As of January 2023, the updated case definition of a COVID-19 case does not contain clinical criteria.

### B. Laboratory Criteria

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

*Confirmatory* laboratory evidence:*

- Detection of SARS-CoV-2 RNA in a clinical or 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 RNA in a clinical or post-mortem specimen 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.

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

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

****Some genomic sequencing tests that have been authorized for emergency use by FDA do not require an initial PCR result to be generated. Cases with only genomic test results and no accompanying PCR result meet criteria for confirmatory laboratory evidence.*

### C. Epidemiologic Linkage

As of January 2023, the updated case definition of a COVID-19 case does not contain epidemiologic linkage criteria.

***NOTE:*** *For outbreak situations, refer to "Outbreak Definitions by Setting" in Section H: OUTBREAKS below.*

## D. 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.

## E. Case Classification

*Confirmed*:

- Meets confirmatory laboratory evidence.

*Probable*:

- Meets presumptive laboratory evidence.

*Possible*:

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

† P*ossible cases may be tracked for epidemiological analysis or to be investigated, however, they will not be included in reported case counts.*

*Not a case*:

- Any case that has a negative (or invalid) laboratory result for COVID-19 (*without another positive result*).
- Any case with a positive serology test result (IgM, IgG, etc.,) without another positive viral test result.

***NOTE:*** *For indeterminate, inconclusive, or equivocal test results: If repeat testing is provided on the same specimen or on a new specimen collected within 2 days of initial specimen collection date and is negative, treat as NAC; otherwise, treat cases as confirmed for the purposes of public health follow-up (isolation, post-exposure recommendations etc.), but keep case status as POSSIBLE.*

## F. Criteria to distinguish a New Case from an Existing Case

The following criteria are used to distinguish a new COVID-19 case:

- A person was most recently classified as a confirmed or probable case with an illness onset date (if available) or first positive specimen collection date (CDRSS Date for Report[1,2]) for that classification >90 days after the prior COVID-19 case, OR

- A person with SARS-CoV-2 sequencing results from a new positive specimen and a positive specimen from the most recent previous case showing a different genetic lineage, OR

- A person previously reported but not classified as a confirmed or probable case (i.e., possible)‡, but now meets the criteria for a confirmed or probable case.

‡ *Repeat possible cases should not be counted.*

### G. Vaccine Breakthrough Case

A breakthrough case is defined as an individual who has SARS-CoV-2 RNA or antigen detected on a respiratory specimen collected ≥14 days after completing a recommended COVID-19 vaccine series.

### H. Outbreaks

#### Outbreak Surveillance and Reporting

All cases of COVID-19 should be reported electronically via CDRSS to Local Health Departments (LHD). If a COVID-19 outbreak is suspected, healthcare facilities, congregate care, schools, and other settings should immediately alert their LHD of the case(s) by phone (see Definitions by Setting).

#### Outbreak Definitions by Setting:

## COMMUNITY

#### COMMUNITY CLUSTERS (NON-HOUSEHOLD)

- ≥3 confirmed or probable COVID-19 cases who are epidemiologically linked to each other with onset of illness within a 7-day period, but who do not share a common residence. This would include individuals who attended a common event or place and for whom disease occurrence is plausible (i.e., occurs within appropriate incubation period).

#### CONGREGATE SETTINGS (E.G., CORRECTIONS, SHELTERS, GROUP HOMES)

[1] Effective August 13, 2021, new cases are created in CDRSS using the 90-day timeframe to align with the updated CSTE surveillance case definition for COVID-19. Prior to August 13 2021, cases were created after 180 days.
[2] Some individuals, e.g., severely immunocompromised persons, can shed SARS-CoV-2 detected by molecular amplification tests >90 days after infection.

- ≥2 confirmed or probable COVID-19 cases among residents who are epidemiologically linked (e.g., overlap on the same unit or ward, or cared for by same HCP) within a 7-day period or 1 laboratory-confirmed case and other epidemiologically linked symptomatic individuals.

- ≥3 confirmed or probable COVID-19 cases among staff with illness onsets occurring within a 7-day period, who are epidemiologically linked, who do not share a household, and who do not have another more likely source of exposure outside of the workplace.

**WORKPLACE SETTINGS (NON-RESIDENTIAL, NON-HEALTHCARE)**

- ≥3 confirmed or probable COVID-19 cases among workers at a facility with illness onsets occurring within a 7-day period, who are epidemiologically linked within the workplace, do not share a household, and do not have a more likely source of exposure outside of the workplace.

  ***Note:*** *Confirmed and probable cases among workers should be classified as outbreak-associated. This includes cases resulting from secondary transmission from an outbreak- associated case among workers who live in shared housing facilities (e.g., migrant labor camps, man camps) or use shared transportation services for work commute provided by the employer. Individual cases resulting from secondary transmission from an outbreak-associated case (e.g., a family member of a worker) who is not employed by the business/employer should not be included in the outbreak case count.*

**EDUCATIONAL SETTINGS[3]**

- The occurrence of disease greater than expected at a specific time and place. For example:

  - Several children who exhibit similar symptoms are in the same classroom, the same wing of a facility, or they attended a common event.
  - There is an increase in school absences with many parents reporting similar symptoms as the reason why their child is not attending school.

  For further information about reporting, prevention, and control of outbreaks in educational settings please see the NJDOH School Health page.

## HEALTHCARE

When new confirmed or suspected cases of COVID-19 are detected among HCP but do not meet surveillance criteria for an outbreak, facilities should work quickly to notify their LHD, conduct a risk assessment and perform contact tracing, test close contacts, and notify potentially exposed

[3] Educational settings are broadly defined and include, but are not limited to, youth camps, youth programs, childcare centers, preschools, primary through secondary schools, vocational schools, colleges, and universities.

individuals of their exposure. Healthcare facilities should follow guidelines outlined in Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2 | CDC, including guidance for management of exposed and infected staff. Facilities with newly identified COVID-19 cases should perform enhanced surveillance. Thresholds to report cases and suspected outbreaks to LHD/NJDOH for healthcare settings can be found at: COVID-19-HC-Outbreak-Definition-Guidance-Jan-2024.pdf (corha.org).

**ACUTE CARE AND CRITICAL ACCESS HOSPITALS[4]**

- ≥2 confirmed or probable COVID-19 cases in patients occurring 4 or more days after admission for a non-COVID condition, who are epidemiologically linked (e.g., overlap on the same unit or ward, or cared for by same HCP) within a 7-day time period.[5]

- ≥2 confirmed, probable, or possible COVID-19 cases in HCP who are epidemiologically linked (e.g., having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms) **AND** ≥1 confirmed or probable COVID-19 case(s) in a patient/resident occurring 4 or more days after admission for a non-COVID condition with epidemiological linkage **AND** no other likely source of exposure is identified for at least 1 of the cases.

- ≥3 confirmed, probable, or possible COVID-19 cases in HCP who are epidemiologically linked (e.g., having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms and/or specimen collection date) **AND** no other likely source of exposure is identified for at least 2 of the cases.

**LONG-TERM CARE FACILITIES (LTCF)[6] AND LONG-TERM ACUTE CARE HOSPITALS (LTACH)**

- ≥2 facility-onset confirmed or probable COVID-19 cases in patients/residents with illness onsets occurring within a 7-day period who are epidemiologically linked.

    - Facility-onset COVID-19 infection in a patient/resident is defined as a laboratory-confirmed diagnosis that originated in the facility. It does not apply to patients/residents who were positive for COVID-19 on admission to the facility and were placed into appropriate Transmission-Based Precautions (TBP) OR patients/residents who were placed into TBP on admission and developed SARS-

[4] Includes general acute care hospitals, comprehensive rehab hospitals, psychiatric hospitals, other specialty hospitals.

[5] Healthcare Personnel (HCP) defined by CDC include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, physician assistants, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).

[6] Includes long-term care facilities, assisted living residences, dementia care homes, residential healthcare facilities and comprehensive personal care homes.

CoV-2 infection (unless there is confirmation of possible transmission or exposure through a breach in PPE).

***Note:*** *In scenarios where a patient/resident has probable exposure to COVID-19 at 2 or more separate healthcare facilities, a public health investigation may be initiated at both locations (including enhanced surveillance for additional cases, contact tracing, and testing and/or quarantine of susceptible contacts).*

- ≥2 confirmed, probable, or possible COVID-19 cases in HCP who are epidemiologically linked (e.g., having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms) **AND** ≥1 confirmed or probable COVID-19 case(s) in a patient/resident with epidemiological linkage **AND** no other likely source of exposure is identified for at least 1 of the cases.

- ≥3 confirmed, probable, or possible COVID-19 cases in HCP who are epidemiologically linked (e.g., having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms) **AND** no other likely source of exposure is identified for at least 1 of the cases.

**OUTPATIENT SETTINGS (AMBULATORY SPECIALITY SETTINGS[7], EMERGENCY DEPARTMENT, URGENT CARE, PRIMARY CARE)**

- ≥3 confirmed or probable COVID-19 cases in patients with epi linkage (e.g., overlap on the same unit or ward or having the potential to have been cared for by common HCP within a 7-day time period of each other) **AND** no other more likely sources of exposure for at least 2 of the cases.

- ≥3 confirmed, probable, or possible COVID-19 cases in HCP with epi linkage (e.g., having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to prior to the onset of symptoms), **AND** no other more likely sources of exposure for at least 2 of the cases.

**Outbreak Conclusion**:

Outbreaks are considered concluded when there are no new symptomatic/asymptomatic probable or confirmed COVID-19 outbreak-associated cases after 28 days (two incubation periods) have passed since the last case's onset date or specimen collection date (whichever is later).

[7] Ambulatory specialty settings include dialysis, endoscopy, ambulatory surgery, infusion, dental, ENT and ophthalmology centers.

# 3. LABORATORY AND HOME-BASED TESTING

Viral tests are recommended to diagnose acute COVID-19 infection. Authorized assays for viral testing include those that detect SARS-CoV-2 nucleic acid or antigen. Viral tests are acceptable for the purpose of case detection and public health action. A list of FDA Emergency Use Authorizations (EUA) for diagnostic tests is available at https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ivd.

Generally, viral testing for SARS-CoV-2 is considered diagnostic when conducted among individuals with symptoms consistent with COVID-19 or among asymptomatic individuals with known or suspected recent exposure to SARS-CoV-2 to control transmission, or to determine resolution of infection. Viral testing is screening when conducted among asymptomatic individuals without known or suspected exposure to SARS-CoV-2 for early identification, and surveillance when conducted among asymptomatic individuals to detect transmission hot spots or characterize disease trends.

**Molecular tests** (NAAT, RT-PCR) that detect the genetic material of the virus are considered to be the gold standard to detect active COVID-19 infections. These tests have varied sensitivity and specificity and turnaround times. If there are discordant molecular test results, regardless of whether they are performed as point-of-care or in a laboratory, any positive result should be considered a confirmed case for the purpose of public health action unless there is a reported laboratory error.

**Rapid antigen tests** are less sensitive than PCR tests, and therefore may return a negative result, while a more sensitive test, such as RT-PCR, may return a positive result. The specificity of rapid antigen tests is generally as high as RT-PCR, which means that false positive results are unlikely.

Despite the high specificity of antigen tests, false positive results can occur, especially when used in populations where the prevalence of infection is low.

Rapid antigen tests are particularly helpful if the person is tested in the early days of symptoms with SARS-CoV-2 when viral load is generally highest. They also may be informative in diagnostic testing situations in which the person has a known exposure to someone with COVID-19. Rapid antigen tests may be used for screening testing in high-risk congregate settings in which repeat testing could quickly identify persons with a SARS-CoV-2 infection to inform infection prevention and control measures, thus preventing transmission throughout the congregate setting. In this case, there may be value in providing immediate results with antigen tests even though they may have lower sensitivity than RT-PCR tests, especially in settings where a rapid turnaround time is required.

**Testing persons who have recently tested positive and recovered from COVID-19:** If someone has had exposure to COVID-19 and is asymptomatic but has had COVID-19 within the past 30 days*, testing to identify a new infection is generally not recommended. If someone has become newly symptomatic after having had COVID-19 within the past 30 days,* antigen tests should be used to identify a new infection. If they test negative, the antigen test should be repeated per FDA

Recommendations (see At-Home COVID-19 Antigen Tests-Take Steps to Reduce Your Risk of False Negative Results: FDA Safety Communication).

If someone had exposure to another person with COVID-19, but the exposed individual has had COVID-19 within the past 30-90 days*, consider using antigen tests (rather than an NAAT, such as a PCR test) to identify a new infection. They should not test until at least five days after their exposure. Whether they are symptomatic or asymptomatic, if they test negative with an antigen test, they should repeat the antigen test as recommended by FDA guidance.

*The clock starts from the day of your first positive test result or your original onset of symptoms, whichever came first.

Reference: Overview of Testing for SARS-CoV-2, the virus that causes COVID-19 | CDC

**Discordant PCR and antigen test results**: In most cases, negative antigen diagnostic test results are considered presumptive. CDC recommends confirming negative antigen test results with a RT-PCR test when the pretest probability is relatively high, especially if the patient is symptomatic or has a known exposure to a person with COVID-19. Similarly, while confirmatory testing is not generally recommended for positive antigen test results, if the pre-test probability is low (patient is asymptomatic, no known exposure to someone with COVID-19), a clinician may choose to order a confirmatory RT-PCR test. Outside of long-term care settings, when confirming an antigen test result with a RT-PCR test, it is important that the time interval between the two sample collections is less than two days, and there have not been any opportunities for new exposures between the two tests. If more than two days separates the two tests, or there have been opportunities for new exposures between the two tests, the nucleic acid test should be considered a separate test – not a confirmatory test.

Reference: Considerations for SARS-CoV-2 Antigen Testing for Healthcare Providers Testing Individuals in the Community | CDC

If an antigen test is positive, public health action should not be delayed while confirmatory RT-PCR testing is in process. If a negative RT-PCR test result (collected within 48 hours after an antigen test) is received, public health measures can be stopped.

**Repeat testing within 90 days after initial positive COVID-19 test:** A positive test result within 90 days of the date of positive specimen collection more likely represents persistent shedding of viral RNA than reinfection. CDC guidance on Choosing a COVID-19 Test should be referenced when deciding which test type should be used for those who tested positive for COVID-19 in the last 90 days.

**Repeat testing >90 days after initial positive COVID-19 test:** Persons who have a positive viral test >90 days after the positive specimen collection date should be treated as a new case unless further review from an Infectious Disease Specialist and public health authorities determine that the repeat positive test is not a new COVID-19 infection, and that the person is not infectious. In the absence of such determination, appropriate isolation precautions and management of close contacts should be reinstituted. Individuals identified as close contacts should be notified of post-exposure recommendations.

**Repeat Testing and CDRSS:** If repeat testing is performed within 90 days after the first viral test, the new test result will append to the existing case in CDRSS. Document the new investigation findings in CDRSS and add note in comments: "possible reinfection or persistent/intermittent viral shedding, public health actions reinstituted."

If repeat testing is performed >90 days after the first viral test, a new case will be created in CDRSS. Document the investigation findings and note the previous case ID# in comments. Do not merge the new CDRSS case with the previous case.

**In long-term and post-acute care settings**, asymptomatic staff and residents who test antigen positive should be excluded from work (staff) or isolated and placed on transmission-based precautions (TBP, resident) and have a confirmatory RT-PCR test performed within 48 hours of the positive antigen test. If the RT-PCR test is negative, staff can return to work and residents can be cared for using standard precautions and any applicable TBP. Symptomatic staff and residents who test antigen negative should be excluded from work (staff) or isolated and placed on TBP (resident) and have a confirmatory RT-PCR test performed within 48 hours of the negative antigen test. If the RT-PCR test is negative, discontinuation of TBP and return to work criteria for symptomatic individuals should be based on the alternate diagnosis, if available, and existing policies and procedures. For full guidance on testing in long-term and post-acute care facilities please see: https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml.

**Serology (antibody) testing** (generally IgG) for COVID-19 may be used to identify people who were previously infected with COVID-19 but should not replace virologic testing to establish the presence or absence of acute SARS-CoV-2 infection. Persons with COVID-19 illness typically begin to develop measurable antibody 7-14 days after illness onset and by 3 weeks most persons will test positive for antibody. IgM and IgG antibodies arise nearly simultaneously so detection of IgM without IgG is uncommon. How long anti-SARS-CoV-2 antibodies persist after infection remains unknown, although IgG antibodies, including IgG against the S and N proteins, persist for at least several months in most persons. Some studies have found that approximately 5-10% do not develop detectable IgG antibodies following infection Serological testing should not be used for case detection or to make decisions about grouping persons residing in or being admitted to congregate settings, such as schools, dormitories, or correctional facilities.

Reference: Interim Guidelines for COVID-19 Antibody Testing | CDC

**Whole Genome Sequencing (WGS)** allows scientists to monitor how SARS-CoV-2 changes over time into new variants, understand how these changes affect the characteristics of the virus, and use this information to predict how it might impact health. Viruses are constantly changing, including SARS-CoV-2. Genetic variations occurring over time can lead to the emergence of new variants that may have different characteristics. While a certain amount of genetic variation is expected to occur as SARS-CoV-2 spreads, it's important to monitor circulating viruses for key mutation(s) that happen in important regions of the genome. Routine analysis of genetic sequence data enables public health partners to identify and characterize variant viruses, to investigate how variants impact COVID-19 disease severity, and how variants impact the effectiveness of vaccines and therapeutics. WGS is performed at specialized public health, clinical, and research laboratories including NJDOH's Public Health and Environmental Laboratory (PHEL).

LHDs should discuss requests for WGS with their CDS Epidemiologist. Specimens that might be considered for sequencing include travel to a location with novel variants of concern; cases associated with a cluster or outbreak; or vaccine breakthrough cases. Whole genome sequencing conducted at PHEL is done for epidemiological purposes and results will not be reported to submitters.

**Specimens**: For viral tests, CDC recommends collecting and testing an upper respiratory specimen, although other specimens may be acceptable and vary by test kit. Clinicians should contact their reference lab to find out what specimen types are acceptable and if testing supplies are available. Alternately, clinicians can order testing supplies from their contracted medical supplier.

**Testing availability**: Testing for SARS-CoV-2 is available at many commercial laboratories, pharmacies, healthcare providers, county-sponsored clinics, and at PHEL. For a list of sites where testing is available (many without a doctor's order) see https://covid19.nj.gov/pages/testing.

**PHEL Testing Criteria:** Public health testing at PHEL is prioritized for vulnerable populations at greatest risk for adverse outcomes, those in high-risk professions, and testing associated with public health investigations, specifically:

- Hospitalized patients with COVID-compatible illness
- Persons with COVID-compatible illness who work, attend, or are patients/residents of healthcare facilities (acute care, outpatient, long-term care), or other congregate settings (school or daycare facilities, homeless shelters, correctional facilities, etc.).
- Persons with COVID-compatible illness who are associated with clusters or outbreaks as identified by state/local health agencies.

**Requesting Testing at PHEL:** For patients meeting public health testing criteria, providers and facilities requesting testing at PHEL should enter cases into CDRSS:

- Select disease subgroup 2019 NCOV;
- Enter medical facility (date of admission, if in ICU, or on ventilator) and treating provider information;
- Enter signs and symptoms and complete ADDITIONAL REQUIREMENTS section;
- In the LABORATORY AND DIAGNOSTIC TEST INFORMATION section add the test "SARS CORONAVIRUS 2 RNA BY PCR" and add "NJPHEL" to the lab name;
- Include the CDRSS Case ID# as the "CDRSS Number" on the PHEL SRD-1 form (*one SRD-1 form is required for each specimen*).
- Email the Virology group at Virology.PHEL@doh.nj.gov with the CDRSS CASE ID# and the estimated delivery time of the specimens.

Providers and facilities not having access to CDRSS should contact their local health department, who should enter the case into CDRSS and issue the SRD-1 form to the provider/facility. Additional information on laboratory testing including detailed shipping instructions for specimens can be found in the NJ PHEL Supplemental Technical Bulletin: Testing for SARS-CoV-2.

**PHEL Testing Results**: Results should be available 24-48 hours after PHEL receives the specimen(s) and are provided via fax to the submitting laboratory and reported electronically in CDRSS. If it has

been > 4 days since the specimen was received at PHEL, contact the NJ Public Health and Environmental Laboratory-Virology Program at 609-530-8516 or virology.PHEL@doh.nj.gov.

**Guidance on laboratory testing:**

- New Jersey COVID-19 Testing Guidelines: https://nj.gov/health/cd/topics/covid2019_professionals.shtml
- New Jersey PHEL Technical Bulletin for COVID-19: https://www.nj.gov/health/phel/documents/Bulletins/Supplemental%20Bulletin%2020.1.4%20SARS-CoV-2%20Testing%20at%20PHEL.pdf
- CDC: https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html
- FDA: https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ivd

**Home-Based Tests:** A variety of home-based COVID-19 tests are widely available. Some home-based tests have been authorized by FDA for screening purposes, others for diagnostic testing. At-home antigen tests have not been authorized by the FDA for use in children under two years of age. Most authorized at-home OTC COVID-19 tests are antigen tests, but there are also a small number of authorized at-home OTC COVID-19 molecular tests, which can be used regardless of the presence of symptoms or vaccination status and do not require repeat, or serial use.

Testing for COVID-19 with a self-test when symptomatic can provide quick results that can be used when considering treatment to reduce the risk of severe illness and to take steps to prevent transmission to others. Antigen self-tests are less sensitive than molecular (i.e., PCR) tests, and all self-tests are additionally subject to potential sample collection and testing errors. Currently, all at-home COVID-19 antigen tests are FDA-authorized for repeat, or serial use. This means people should use multiple tests over a certain time period, such as 2-3 days, especially when the people using the tests don't have COVID-19 symptoms.

There are separate instructions for tests designated for OTC home use (i.e., self-testing) and for healthcare provider-facilitated testing, which would generally need to be performed in a facility operating under a CLIA certificate. The appropriate instructions must be followed depending on the setting in which the test is used.

**Recommendations for Healthcare Providers using Home-Based Tests**

Viral testing (antigen or NAAT) is recommended following a higher-risk exposure and might also be used to inform when healthcare providers (HCP) with SARS-CoV-2 infection may return to work. Using laboratory-based or point-of-care tests is generally preferred in these situations to help ensure the test was administered correctly by a trained provider and to allow for verified results to be shared with occupational health services. Some facilities may consider having HCPs use self-tests in some situations, with the following considerations: self-tests may inappropriately transfer the cost of testing to HCPs; they require trust that the HCP self-administered and interpreted the test result correctly; and they require that HCPs report their own results to occupational health services.

If HCP have symptoms of COVID-19, a single negative test from at least one viral test is sufficient in most circumstances. If a higher level of clinical suspicion for SARS-CoV-2 infection exists, consider maintaining work restrictions and confirming with a second negative NAAT. If using an antigen test, a negative result should be confirmed by either a negative NAAT (molecular) or second negative antigen test taken 48 hours after the first negative test.

If HCP had a higher-risk exposure with a patient, visitor, or HCP with COVID-19 then HCP should seek testing immediately but not earlier than 24 hours after the exposure. If negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test. This will typically be at day 1 (where day of exposure is day 0), day 3, and day 5. Due to challenges in interpreting the result, testing is generally not recommended for asymptomatic people who have recovered from SARS-CoV-2 infection in the prior 30 days. Testing should be considered for those who have recovered in the prior 31-90 days; however, an antigen test instead of NAAT is recommended. This is because some people may remain NAAT positive but not be infectious during this period.

**Resources for Home-Based Testing:**

- Over-the-Counter (OTC) Home Testing and CLIA Applicability FAQs
- COVID-19 Testing: What You Need to Know | CDC

# 4. PURPOSE OF SURVEILLANCE AND REPORTING

- To identify and manage cases and contacts in high-concern settings, and that care for vulnerable populations, including in healthcare, long-term care, schools and daycare facilities, correctional facilities, and other congregate settings.
- To identify risk factors for exposure, severity, and outcomes to target prevention messaging for at-risk groups.
- To characterize clinical presentation and severe outcomes, so healthcare partners can plan for appropriate patient care.
- To provide epidemiological information to stakeholders and the public.

# 5. REPORTING PROCEDURES

## A. COVID-19 Test Results

**NJDOH continues to require that all healthcare providers, laboratories, and facilities performing testing for COVID-19 electronically report:**

- POSITIVE point of care (POC) antigen test results.
- POSITIVE and NEGATIVE results for all molecular (e.g., RT-PCR) tests.

All reported cases must contain complete contact information for the patient and for the healthcare provider.

***Notes:***

- *While reporting NEGATIVE POC antigen laboratory test results to NJDOH is no longer required, they can continue to be reported to NJDOH (it may be easier for some electronic laboratory reporting systems to report all POC test results).*
- *Self-tests are not CLIA-waived tests and are authorized for self-collection, self-testing, and self-reading of test results. Individuals are not required to report the results of at-home self-tests to public health authorities.*

**How to Report SARS-CoV-2 Test Results**: Tests that are performed in a laboratory must be reported into the Communicable Disease Reporting and Surveillance System (CDRSS), POC tests may either be reported through SimpleReport (https://simplereport.gov/) or CDRSS. Those who are not currently using CDRSS will likely find that SimpleReport is an easier, more user-friendly alternative for POC reporting.

**SimpleReport Reporting Option**: SimpleReport was developed by the Centers for Disease Control and Prevention (CDC) as a fast, free, and easy way for COVID-19 (SARS-CoV-2) testing facilities to report POC test results to public health departments. It works with any COVID-19 rapid POC test and maintains HIPAA standards. NJDOH and local health departments will automatically receive test results for New Jersey residents and for persons tested at New Jersey facilities that are entered into SimpleReport.

To get started, testing providers should go to https://simplereport.gov/, click on Getting Started, and then Onboard your Organization. Online training resources are available, including a user guide and videos. SimpleReport is managed and coordinated by CDC who provides support for users having problems logging in or who have other questions about using SimpleReport.

**CDRSS Reporting Option:** It may be preferable for test administrators having electronic laboratory reporting (ELR) capabilities (HL7 messaging) to report into CDRSS using ELR and test results can also be manually entered. For new CDRSS users, select the Quick Start Option for COVID-19 Training on the CDRSS home page (available at: https://cdrs.doh.state.nj.us/cdrss/login/loginPage/). Questions about reporting into CDRSS should be sent to cdrs.admin@doh.nj.gov.

**Home-Based Tests:** Positive test results from home-based tests that involve healthcare oversight or that are sent for testing in a laboratory must be reported to public health authorities. Self-tests are not CLIA-waived tests and are authorized for self-collection, self-testing, and self-reading of test results. Results can be reported either through CDRSS or through SimpleReport. Individuals are not required to report the results of at-home self-tests to public health authorities. Healthcare providers and organizations administering screening programs should notify the LHD of positive self-test results if there are concerns about exposures in high-risk

settings[8] or if a case may be associated with a possible cluster or outbreak so that public health action can be taken. At the LHD's discretion, self-test results can be entered into CDRSS selecting "COVID-19 HOME BASED TEST" under Test Name and classifying the case as POSSIBLE. Self-tests will not be counted in official COVID-19 statistics.

**Additional Reporting Considerations**: Per NJ Executive Directive 21-012 (Revised), long-term care facilities performing point-of-care tests (not performed in a central laboratory) should report results through the NHSN antigen module.

Persons with pending COVID-19 test results do not need to be entered in CDRSS. LHDs should provide instructions for obtaining access to CDRSS to healthcare providers and laboratories they are aware of who aren't in compliance with reporting requirements. If non-compliance continues, LHD should notify OLPH, their CDS COVID Epidemiologist and cdrs.admin@doh.nj.gov.

### B. COVID-associated Deaths

Hospital administrators should report COVID-19 associated deaths occurring within their facility electronically through CDRSS and include date of admission and date of discharge (date of death), reason for hospitalization (COVID-19 associated or not), if patient had pre-existing medical conditions (specify), if patient was in ICU, if on mechanical ventilation, date of death, and if the patient was associated with a long-term care facility or other known outbreak.

LHDs should update CDRSS for COVID-19 deaths that are investigated. The following information should be included: date of death; if the patient had pre-existing medical conditions (specify); name of medical facility (if hospitalized); dates of admission and discharge (date of death), if patient was in ICU, if on mechanical ventilation, if patient was a resident of a long-term care facility (LTCF) or other communal living facility (specify name); and if this case is associated with a known outbreak (enter E#). Phone calls to NJDOH are not needed if the information is provided in CDRSS. For deaths associated with an outbreak, if the person meets the POSSIBLE case definition, LHDs should enter these cases in CDRSS, even in the absence of laboratory confirmation and enter the appropriate outbreak E-number.

### C. Suspect or Confirmed COVID-19 Outbreaks

LHDs should continue to report suspected or confirmed outbreaks of COVID-19 by telephone to NJDOH following standard reporting procedures.

[8] High-risk settings are those with persons at high risk of severe illness and those with high risk of sustained transmission. These settings include healthcare settings, long-term care facilities, shelters, corrections, congregate care settings, K-12 schools, childcare, and institutions of higher education.

# 6. CASE INVESTIGATION

## A. Investigation

Public health agencies are primarily monitoring incident COVID-19 cases through laboratory and healthcare. Case investigation strategies have changed over time and may continue to change due to possible waves of increased SARS-CoV-2 transmission as protection from vaccines and prior infection wanes and the virus evolves, resulting in new variants. The NJDOH Communicable Disease Service (CDS) will continue to communicate any changes in recommendations to case investigation strategies.

NJDOH is prioritizing the monitoring of severe outcomes associated with COVID-19 in vulnerable populations, particularly in residents of long-term care and pediatric populations. Specifically, NJDOH is requesting that LHDs conduct investigations for:

- Severe pediatric COVID-19 cases and pediatric deaths
- Cases associated with COVID-19 outbreaks
- Cases associated with novel COVID-19 variants of concern resulting in severe outcomes.

**Healthcare providers and infection preventionists should:**

- Be diligent about the timely reporting of severe outcomes in pediatric COVID-19 cases defined as pediatric hospitalizations requiring intensive care and pediatric deaths.
    - Pediatric COVID-19 hospitalizations should be entered into CDRSS with a Case Status of 'REPORT UNDER INVESTIGATION (RUI)' and a Report Status of 'PENDING' to allow for LHD follow-up. Information should be entered into the following CDRSS Screens:
        - Disease Information
        - Patient Personal Information
        - Clinical Status, including information on pre-existing conditions
        - Medical Facility and Provider Information, including ventilator usage
        - Risk Factors
        - Signs and Symptoms
    - Pediatric COVID-19 deaths not associated with a hospitalization should be entered into CDRSS and/or reported to the LHD.

**Local health departments should:**

- Investigate pediatric cases hospitalized for COVID-19 and admitted to an intensive care unit and pediatric deaths.
    - LHDs should investigate severe pediatric hospitalizations needing intensive care as reported by providers and infection preventionists and pediatric deaths entered into CDRSS with a Report Status of 'PENDING'. Information regarding possible exposures and exposure settings should be documented.

- If LHDs are notified of a pediatric death by phone, a case should be created in CDRSS.

- Investigate cases associated with outbreaks and prioritize investigation for cases associated with outbreaks in high-risk congregate care settings for the purpose of preventing large-scale transmission and severe health outcomes. These settings include post-acute care and other healthcare settings, correctional facilities, and homeless shelters.

- Investigate cases with severe outcomes or immune escape associated with a novel variant.
  - CDS will provide guidance regarding cases associated with novel variants that need follow-up and enhanced investigation and will update the Report Status in CDRSS to PENDING.

**When speaking with a COVID-19 case, the investigator should:**

- Provide guidance on steps that can be taken to prevent the spread of COVID-19;
- Advise the individual that they should notify close contacts (within 5 days of last contact) and provide them with recommendations on steps that can be taken to lower risk from COVID-19;
- Advise the individual that they may need to notify their employer, school, or other organized activity;
- Ensure that cases are aware of and know how to access supportive services, including vaccines and treatment options. All cases at a high-risk for severe illness should be advised to consult a healthcare provider to discuss antiviral medications or monoclonal antibody treatment options.

**LHDs will find COVID-19 cases within CDRSS with either a Report Status of 'PENDING" or 'LHD REVIEW'.**

- If a provider, infection preventionist, or NJDOH has updated a case's report status to 'PENDING' to indicate follow-up is needed, it will be found within the PENDING CASES screen of CDRSS.

- Cases with a Report Status of 'LHD REVIEW' can be accessed within CDRSS by clicking on Search → Case Search → Quick and then selecting 'NOVEL CORONAVIRUS-2019 NCOV' from the Select Disease dropdown menu and 'LHD REVIEW' from the Select Report Status dropdown menu.

- Once investigation of a case is completed, LHDs should update the REPORT STATUS to 'LHD CLOSED'.

**High-Risk Settings**

LHDs already have well-established reporting and communication mechanisms with many high-risk settings. LHDs should ensure they have accurate contact information for these settings and share LHD contact information (including how to reach the LHD after-hours) with these groups.

Active surveillance within post-acute care settings is ongoing. These facilities (primarily nursing homes and assisted living facilities) report the presence or absence of new COVID-19 cases in residents and staff to NJDOH/LHDs two times weekly via online survey. LHDs should continue to review these submissions and work closely with these facilities on outbreak prevention and control following NJDOH guidance for long-term care facilities.

**Communications & Education**

Persons who test positive for COVID-19 or who find out they have been in close contact with someone with COVID-19 may need additional information. The NJPIES hotline continues to serve as a resource for persons with questions about COVID-19, but LHDs are also an important source of credible information for residents in their jurisdictions. Public health education should include information on:

- COVID-19 activity levels (e.g., local data/trends);
- Core & added prevention strategies for protecting oneself and others;
- Identifying and notifying close contacts;
- Travel recommendations;
- Testing locations and test result interpretation/actions to take;
- Vaccination locations and recommendations for staying up to date; and
- Treatment options and linkages to healthcare resources.

**B. Case Ascertainment and CDRSS Documentation**

LHDs should investigate prioritized positive viral test results (molecular or antigen), implement timely control measures, and classify cases according to the case definition.

LHDs should classify cases meeting vital statistics criteria only (no confirmatory or presumptive laboratory evidence) as POSSIBLE. If COVID-19 test results are received post-mortem, the case status should be changed to CONFIRMED if tests are positive or changed to NOT A CASE if tests are negative (depending on timing of testing in relation to illness onset).

LHDs should link all COVID-19 cases (and deaths) associated with an outbreak to the outbreak E#. Symptomatic COVID-19 outbreak-associated cases without laboratory test results should be manually entered into CDRSS with a Case Status of POSSIBLE and linked using the Outbreak E#.

LHDs should NOT investigate positive serology (antibody) reports. If an existing case is in CDRSS, a new laboratory report should append to the case without changing the case or report status. Disregard serology results and investigate/classify the case as per case definition (review type of laboratory test). If a new case is created with a positive serological laboratory test result only (no viral test result), the report will be E-SORTED/E-CLOSED. If results from serology tests are received by fax (e.g., out-of-state laboratory), the LHD should enter positive results into CDRSS and classify as NOT A CASE/LHD CLOSED. Negative serology results do not need to be entered manually into CDRSS by LHDs.

## C. Key CDRSS Fields Needed for COVID-19 Case Investigations

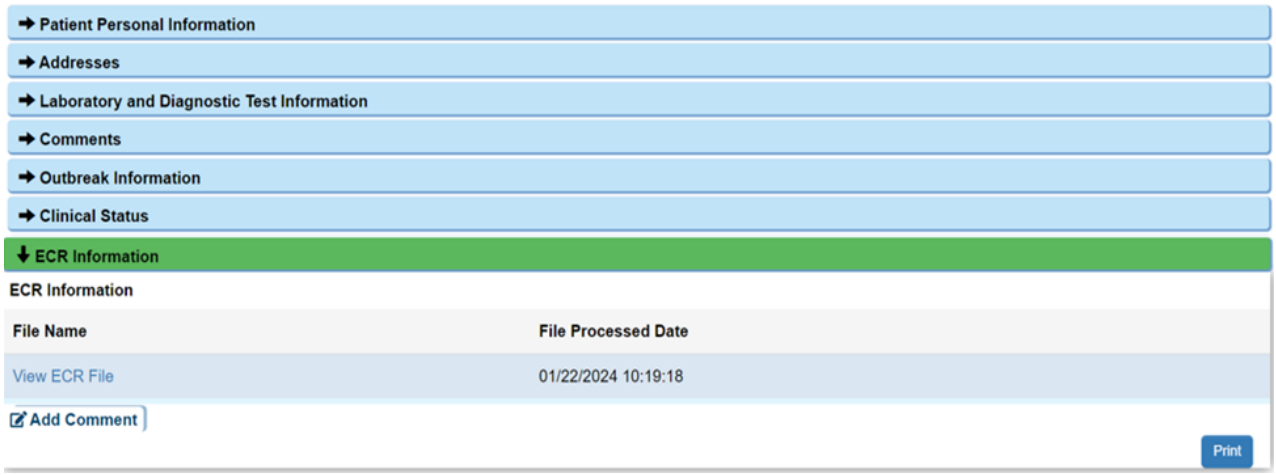
| CDRSS Screen | Required Information |
|---|---|
| **Patient Info** | For COVID-positive cases, select subgroup 2019 NCOV |
| **Patient Personal Information** | Race and ethnicity are important to understand how novel diseases are impacting New Jersey residents |
| **Addresses** | Include out-of-jurisdiction (within NJ) close contacts (or facilities) as an Additional Address to grant access to the case to the LHD where the close contact resides. Notify that LHD and provide the CDRSS Case ID#. |
| **Clinical Status** | • Illness onset date<br>• Was patient hospitalized (complete for both YES and NO answers)<br>• Reason for hospitalization (select COVID-related or NON COVID-related)<br>• Pre-existing conditions (select NONE if applicable)<br>• Patient died (complete for YES and NO answers); if YES, add in date of death<br>• Patient died during investigation (check YES if the cause of death is due to COVID-19 or the case died within 30 days of the first positive specimen collection date. This variable should be left unchecked if the reported death does not have a COVID-19 cause of death or the date of death occurred greater than 30 days since the first positive specimen collection date. |
| **Medical Facility and Provider Information** | Patient Status<br>For admitted patients (patient status = INPATIENT):<br>• Date of admission AND discharge (if died, date of discharge = date of death)<br>• Was patient in ICU<br>• Was patient on ventilator |
| **Pregnancy Information** | Is patient pregnant |
| **Immunization Information** | Enter dates for COVID-19 vaccine doses, including manufacturer, if known |
| **Risk Factors** | Complete all |
| **Signs and Symptoms** | • Enter responses for all default symptoms (YES and NO answers)<br>• SENSORY DEFICIT – write “taste” and/or “smell” in attribute field if applicable<br>• Add additional symptoms as needed<br>• Enter ASYMPTOMATIC if applicable |
| **Outbreak Information** | Link cases associated with a known outbreak (E-Number) |
| **Contact Tracing**<br><br>**(*If feasible given disease burden and resources*)** | For high-risk / high-concern settings:<br>Did the patient have close contact with a laboratory-confirmed (RT-PCR or antigen) case, or an ill person epidemiologically linked to a lab-confirmed case, prior to the onset of symptom(s)? (If yes, add contacts – by case ID)<br>Has this case come in close contact with others during the infectious period? (If yes, add contacts – by name; include contact info, last exposure date, and HH/non-HH contact type) |

| CDRSS Screen | Required Information |
|---|---|
| **Additional Requirements** | Complete all – these questions document high-concern exposures/contacts |
| **Industry and Occupation Information** | Complete, at the minimum, fields marked as required. |
| **Case Investigation** | To be used when interviewing a case to collect information on illness onset, exposure history, settings visited during the infectious period, and close contacts. Complete all. |
| **Contact Monitoring** | To be used as needed to capture information on suspect cases that are close contacts of known cases in CDRSS. This can be used to monitor potential cases associated with an outbreak the LHD wants to follow-up on, in a daycare, for example. This can be used to investigate/monitor contacts of cases with novel variants that may be associated with severe outcomes. LHDs should create a record in CDRSS with CASE STATUS = 'Report Under Investigation' and REPORT STATUS = 'PENDING" for a known close contact. Complete all fields and remember to monitor any contacts that are created. |
| **Travel** | Complete when a case is being interviewed and 'Travel' is selected as an answer to the Case Investigation question 'Did you have close contact with anyone in the following settings?'. If 'Travel' is selected, the interviewer is prompted to complete the Travel questionnaire. This may be particularly relevant when investigating novel variant cases. |

## D. Electronic Case Reporting (eCR)

Electronic case reporting (eCR) is the automated, real-time exchange of case report information between electronic health records and public health agencies. Case report information is sent from healthcare facilities to CDRSS. An eCR is a subset of a medical record, but not the entire medical record. Electronic case reports (eCRs) for some COVID-19 cases are available in CDRSS. Test results and other case information are imported to CDRSS through electronic case reporting.

An eCR HTML file includes information that would be received in an ELR plus additional information including patient demographics, provider details, immunizations, administered medications, plan of treatment, problems, reason for visit, test results, and social history. Information in an eCR may help support a case investigation. ECR does not replace ELR but will be used supplementary to create a more complete case. The screenshot below depicts how an eCR can be accessed from within a CDRSS case.




### E. MIS-C Cases

Healthcare providers who have cared for, or are caring for, patients younger than 21 years of age meeting MIS-C criteria outlined in Section 1 of the Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with SARS-CoV-2 Infection Case Report Form should report suspected cases to NJDOH. The case report form should be completed and sent via secure email to pedcov@doh.nj.gov. CDS will review case report forms and coordinate medical records requests and chart abstractions if necessary. For all cases meeting criteria, CDS staff will create MIS-C cases in CDRSS and document all available information received so that LHDs can stay informs of cases within their jurisdiction.

## 7. CONTROLLING FURTHER SPREAD

### A. Community Settings (Non-Healthcare settings)

Updated CDC guidance was released on March 1, 2024 and provides recommendations for the prevention and control of respiratory viruses, including COVID-19, in non-healthcare, community and congregate settings. NJDOH recommends the use of the following core and additional prevention strategies.

#### CORE PREVENTION STRATEGIES

Core Prevention Strategies help individuals protect themselves and others from health risks associated with viral respiratory illnesses. These strategies include:

- STAYING UP TO DATE WITH VACCINATIONS:
  - Getting a current COVID-19 vaccine is key to preventing illness and helps stop spread of the infection. See Stay Up to Date with COVID-19 Vaccines | CDC.

- PRACTICING GOOD HYGIENE:

- Cover your nose and mouth with a tissue when you cough or sneeze, and throw the tissue in the trash. If you do not have a tissue, cough or sneeze into your elbow instead of your hands.
- Learn and use proper handwashing technique and teach it to children. If soap and water are not available, using a hand sanitizer with at least 60 percent alcohol.
- Regularly clean frequently touched surfaces, such as doorknobs/handles, handrails, counter surfaces, etc.

- TAKING STEPS FOR CLEANER AIR:
  - Bring more fresh outside air inside your home or workplace, use inside air purifiers, and gather with others outdoors, when possible, to maximize fresh air flow and decrease viral spread through the air.

- STAYING AT HOME WHEN SICK:
  - Stay at home and away from others (including those you live with who are not sick) when you develop symptoms of a respiratory virus that are not better explained by another cause. Symptoms include fever, chills, fatigue, cough, runny nose, and headache, as well as others.
  - If you have risk factors for severe illness, seek health care immediately for testing and/or treatment if you believe you may have a respiratory virus.
    - There are treatments for COVID-19 that can lessen the severity of symptoms and shorten the length of illness, but treatment must be started as early as possible (within several days of symptom onset).
  - Normal activities can be resumed when, for a minimum of 24 hours, **both** of the following are true:
    - Symptoms are improving overall, **and**
    - You have not had a fever (and have not been using fever-reducing medications)

**ADDITIONAL PREVENTION STRATEGIES/ADDED PRECAUTIONS**

Even if you are feeling better, you may still be able to spread the virus that made you sick. To prevent further spread of the virus, the use of added precautions over the next 5 days while you resume normal activities are recommended. These Additional Prevention Strategies can also be used by persons who are not ill to provide extra protection for themselves and others:

- WEAR A MASK:
  - Generally, masks can help act as a filter to reduce the number of germs you breathe in or out. When worn by a person who has a virus, masks can reduce the chances they spread it to others. This is especially important if you will be near someone who has risk factors for severe illness.

- PRACTICE PHYSICAL DISTANCING:

  - Infectious droplets and particles accumulate closer to the person who is releasing them. Putting physical distance between yourself and others can help lower the risk of spreading a respiratory virus.

- TEST FOR RESPIRATORY VIRUSES:
  - Getting tested for respiratory viruses can help you decide to get treatment to reduce your risk of severe illness and/or take steps to lower your chances of spreading viral illness to others.
  - Antigen tests ("self-tests" or "rapid tests") usually return results quickly (around 15 minutes). PCR tests are normally conducted by a healthcare provider. Although antigen tests are usually faster, they are not as good at detecting viruses as PCR tests.

- **IF YOU DEVELOP A FEVER OR START TO FEEL WORSE AFTER GOING BACK TO NORMAL ACTIVITIES:**
  - Return to staying home and away from others again until, for at least 24 hours, your symptoms are improving overall, and you have not had a fever (and are not using fever-reducing medication). Then take added precautions for the next 5 days.

References: CDC Respiratory Virus Guidance

## B. Healthcare Settings

There have been no recent changes to respiratory virus guidance for healthcare settings. **Guidance recommendations for healthcare settings can be found at CDC's Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic**.

Healthcare facilities each have unique strengths and challenges which often require facility-specific infection prevention and control practices. Healthcare facilities should consider several factors when determining when and how to implement COVID-19 infection prevention and control practices (e.g., patients/residents with highest risk of severe outcomes, input from stakeholders, outbreak status). In addition, state and national data on COVID-19 and trends of other respiratory viruses can help inform facility-specific practices:

- NJDOH Influenza and Respiratory Illness Surveillance Reports
- National Emergency Department Visits for COVID-19, Influenza, and Respiratory Syncytial Virus

**Healthcare workers** with COVID-19 should follow the return-to-work guidance provided to them by their occupational health team and their employer. Refer to current CDC and NJDOH guidance for information on discontinuation of isolation precautions, special precautions for healthcare workers, and additional information:

- Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2 (CDC)
- Guidance for COVID-19 Diagnosed and/or Exposed Healthcare Personnel (with COVID-19 Case Risk Algorithm (NJDOH).

Also refer to above Section 3: Laboratory and Home Based Testing for SARS-CoV-2 testing considerations for healthcare workers.

## C. Other Settings

### Long-Term Care and Other Post-Acute Care Facilities

COVID-19 can quickly spread in congregate settings and nursing homes serve a particularly vulnerable population. LTCFs should report COVID-19 positive cases and respiratory outbreaks (COVID-19 confirmed or not) to the LHD. The LHD should report outbreaks to CDS and provide updated outbreak information as directed by CDS. Facilities should review, implement, and reinforce an infection control plan for preventing communicable disease among residents, visitors, and healthcare personnel when COVID-19 is circulating in the facility and/or community. CDC is currently reviewing and updating guidance for nursing homes and LTCFs: Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic. Additional useful information can be found at: https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml.

The plan should include:

- Use of standard and transmission-based precautions which include appropriate use of personal protective equipment;
- Implementation of universal source control (i.e., use of barrier to cover the nose and mouth) for all persons entering the facility. All patients/residents, whether they have COVID-19 symptoms or not, should cover their nose and mouth (i.e., source control) when around others, as tolerated. Source control may be provided with tissue, facemasks, or cloth face coverings. Cloth face coverings are not appropriate substitutes for facemasks or respirators in workplaces where masks or respirators are recommended or required and available.
- Respiratory etiquette and hand hygiene programs;
- Patient placement, including cohorting of residents, staff, and equipment; this may involve dedicating certain wings or areas of the facility for separation of groups.
- Restricted movement of residents and staff, no communal dining/activities, and limitations on who can enter the facility;
- COVID-19 and other respiratory virus testing;

- Consideration of antiviral treatment for COVID-19 in persons with higher risk of illness severity;

- Active surveillance/screening and risk assessment for residents and staff; being aware of atypical presentations in older adults.

CDC and NJDOH have detailed infection control guidance and recommendations for LTCFs:

- CDC: Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic

- NJ: https://nj.gov/health/cd/topics/covid2019_healthcare.shtml

Staffing Shortages: Facilities should try to handle staffing internally (e.g., extra shifts, extra pay, contact staffing agencies); reach out to sister facilities if owner has more than one LTC facility; and contact county or local OEM for Medical Reserve Corps or other possible resources. If all staffing solutions fail, the facility or LHD should contact NJDOH/Licensing to determine operational capacity and compliance of the facility.

**Schools and Daycare Facilities**

NJDOH guidance and public health recommendations for K-12 schools and childcare settings is posted at https://www.state.nj.us/health/cd/topics/covid2019_schools.shtml. CDC guidance for K-12 schools and Early Care and Education (ECE) Programs is located at Operational Guidance for K-12 Schools and Early Care and Education Programs to Support Safe In-Person Learning | CDC.

The decision to close a school is made at the local level and is made jointly between the school district and the local health department. The Department of Health does not have authority to mandate closure of private daycares. Daycare facilities should contact New Jersey Department of Children and Families (DCF) for guidance. Questions concerning NJDOE guidance for schools should be addressed to each county's office of education: https://www.nj.gov/education/about/counties/. .

**Correctional and Detention Facilities**

Correctional and detention facilities may have a higher risk of COVID-19 transmission due to congregate living arrangements, as well as due to a higher prevalence of medical conditions linked to severe COVID-19. It is recommended that these facilities follow CDC respiratory virus guidance for community settings but also take into account risks specific to the facility to guide decisions about when to apply specific prevention measures. NJDOH may recommend enhanced prevention strategies if COVID-19 is circulating in the facility.

If the facility offers healthcare services, the healthcare unit of the facility should follow CDC Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings.

**Group Homes, Homeless Service Sites, and Shelters**

Group homes, homeless service sites, and shelters may have a higher risk of COVID-19 transmission due to congregate living arrangements. It is recommended that these facilities follow CDC respiratory virus guidance but also take into account risks specific to the facility to guide decisions about when to apply specific prevention measures. NJDOH may recommend enhanced prevention strategies if COVID-19 is circulating in the facility.

If the facility offers healthcare services, the healthcare unit of the facility should follow CDC Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings.

LHDs should consult with their county department of human services for assistance with COVID-19 cases who live in shelters or who are experiencing homelessness. For additional assistance, LHDs can contact the NJ Department of Human Services 609-292-3717 or call 211.

### D. Personal Protective Equipment Use/Supply

Facilities are encouraged to share supply needs with their county OEM. CDC has guidance on the appropriate use of PPE and strategies to optimize PPE and equipment: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/

### E. Post-mortem Guidance

Guidance on post-mortem specimens is available at https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html. Additional questions on post-mortem care and disposition should be referred to the regional medical examiner's office: NJ Office of the Chief State Medical Examiner.

### F. Vaccination

COVID-19 vaccines are considered safe and effective, and often can be obtained free of charge. CDC recommends COVID-19 vaccines for everyone ages 6 months and older. The number of vaccine doses needed to be considered up to date depends on age, previous vaccination, immune status, and which vaccine is received. Staying up to date with COVID-19 vaccines helps prevent people from getting seriously ill, being hospitalized, and dying.

For more information on COVID-19 vaccines and staying up to date with vaccination visit: Stay Up to Date with COVID-19 Vaccines | CDC

**Vaccine Resources:** Several COVID-19 vaccines are available for use. There is a national vaccine hotline and many online resources for healthcare providers, LHDs, and the public:

- National COVID-19 Vaccine Hotline: 1-800-232-0233
- Deaf and hard of hearing individuals can call TTY 1-888-720-7489
- NJDOH Communicable Disease Service COVID-19 Vaccine Information website

References:
NJDOH COVID-19 Vaccination
NJDOH VAERS

### G. Travel

COVID-19 still poses a risk for travelers. It is recommended that everyone follow steps to protect themselves and others during travel. Be sure to stay up to date on travel related information by regularly visiting the NJDOH Traveler's Health page.

Core Prevention Strategies should be practiced before and during both domestic and international travel to reduce the risk of contracting COVID-19 and other viral respiratory illnesses. These strategies include:

- Staying up to date with vaccinations
- Practicing good hygiene
- Staying home when sick

Additional precautions such as wearing a mask, practicing physical distancing, and testing for respiratory viral illnesses provide extra layers of protection for you and those around you, both during and after travel. More information on COVID-19 and travelers' health can also be found at Travelers' Health – COVID-19 | CDC.

## ADDITIONAL INFORMATION

NJDOH: https://nj.gov/health/cd/topics/ncov.shtml

CDC: https://www.cdc.gov/coronavirus/2019-ncov/index.html