



# COVID-19

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

Investigation Guidance for New Jersey Local Health Departments

November 23, 2020

## 1 THE DISEASE AND ITS EPIDEMIOLOGY

### A. Etiologic Agent

COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. 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). The most recently discovered coronavirus causes coronavirus disease COVID-19, which on March 11, 2020, the World Health Organization (WHO) declared a pandemic.

### B. Clinical Description

Common symptoms of COVID-19 include fever, cough, and shortness of breath. Other combinations of symptoms have also been reported, including chills, headache, myalgia, sore throat, a new loss of taste or smell, congestion or runny nose, nausea, vomiting, and diarrhea. Symptoms are mild for most people and begin gradually. Studies have documented infection in patients who never develop symptoms (asymptomatic) and in patients not yet symptomatic (pre-symptomatic). Since asymptomatic persons are not routinely tested, the prevalence of asymptomatic infection and detection of pre-symptomatic infection is not well understood and may be more prevalent than previously expected. WHO reports that data suggest that 80% of infections are mild or asymptomatic, 15% are severe infection, requiring oxygen and 5% are critical infections, requiring ventilation ([https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf?sfvrsn=96b04adf\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf?sfvrsn=96b04adf_4)).

Atypical presentations have been described and older adults and persons with medical comorbidities may have delayed presentation of fever and respiratory symptoms. Lymphopenia, neutrophilia, elevated serum alanine aminotransferase and aspartate aminotransferase levels, elevated lactate dehydrogenase, high CRP, and high ferritin levels may be associated with greater illness severity. Most people (about 80%) recover without needing treatment, but approximately 1 out of 6 people infected becomes seriously ill and develops difficulty breathing. Older people, and those with underlying medical conditions such as heart conditions, pulmonary disease or diabetes, are more likely to develop serious illness. The clinical spectrum ranges from mild disease with non-specific signs and symptoms of acute respiratory illness, to severe pneumonia with respiratory failure and septic shock. Treatment for COVID-19 is supportive care.

In peer-reviewed literature and public discussion, persistent symptoms are being reported among COVID-19 survivors, including individuals who initially experience a mild acute illness. Though there is limited information on late sequelae of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/late-sequelae.html>), reports of persistent symptoms in persons who recovered from acute COVID-19 illness have emerged. The most commonly reported symptoms include fatigue, dyspnea, cough, arthralgia, and chest pain.

Other reported symptoms include cognitive impairment, depression, myalgia, headache, fever, and palpitations. More serious complications appear to be less common but have been reported. These complications include:

- Cardiovascular: myocardial inflammation, ventricular dysfunction
- Respiratory: pulmonary function abnormalities
- Renal: acute kidney injury
- Dermatologic: rash, alopecia
- Neurological: olfactory and gustatory dysfunction, sleep dysregulation, altered cognition, memory impairment
- Psychiatric: depression, anxiety, changes in mood

### C. Reservoirs

Much is unknown about COVID-19. Current knowledge is largely based on what is known about similar coronaviruses. Coronaviruses are a large family of viruses that are common in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people, such as with MERS-CoV, SARS-CoV, and now with SARS-CoV-2, the virus that causes COVID-19.

The SARS-CoV-2 virus is a betacoronavirus, like MERS-CoV and SARS-CoV and is thought to originate in bats. The sequences from U.S. patients are similar to the one that China initially posted, suggesting a likely single, recent emergence of this virus from an animal reservoir.

### D. Mode of Transmission

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). People who are infected but do not show symptoms can also spread the virus to others. When people with COVID-19 cough, sneeze, sing, talk, or breathe they produce respiratory droplets. These droplets can range in size from larger droplets (some of which are visible) to smaller droplets. Respiratory droplets cause infection when they are inhaled or deposited on mucous membranes, such as those that line the inside of the nose and mouth.

On 10/21/20 CDC modified the definition of a close contact regarding the length of time associated with exposure and the time interval to assess the potential exposure that can result in transmission. The definition now includes a total of 15 minutes or more of close contact (within 6 feet) exposure to an infected person during a 24-hour period. Please note that the period of exposure is cumulative (i.e., the total amount when it is added together). This exposure must occur when the infected person is considered to be infectious which begins 2 days prior to symptom onset, or specimen collection for asymptomatic cases, and extends until the time the person is isolated.

It is also important to note that 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

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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).

Close contact is defined 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 starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to test specimen collection) until the time the patient is isolated.

OR

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

Airborne: Some infections can be spread by exposure to virus in small droplets and particles that can linger in the air for minutes to hours (airborne transmission). There is evidence that under certain conditions, people with COVID-19 seem to have infected others who were more than 6 feet away. These transmissions occurred within enclosed spaces that had inadequate ventilation. Sometimes the infected person was breathing heavily, for example while singing or exercising. Under these circumstances, scientists believe that the amount of infectious smaller droplet and particles produced by the people with COVID-19 became concentrated enough to spread the virus to other people. The people who were infected were in the same space during the same time or shortly after the person with COVID-19 had left.

Surfaces: Transmission of novel coronavirus to persons from surfaces contaminated with the virus has not been documented, but current evidence suggests that COVID-19 may remain viable for hours to days on surfaces made from a variety of materials.

Animals: At this time, the risk of COVID-19 spreading from animals to people is considered to be low. It appears that the virus that causes COVID-19 can spread from people to animals in some situations. A small number of pets worldwide, including cats and dogs, have been reported to be infected with the virus that causes COVID-19, mostly after close contact with people with COVID-19.

### E. Incubation Period

Existing literature regarding SARS-CoV-2 and other coronaviruses suggest that the incubation period may range from 2–14 days with a median of 4-5 days.

### F. Period of Communicability or Infectious Period

Available data indicate that persons with mild to moderate COVID-19 remain infectious no longer than 10 days after symptom onset. Persons with more severe to critical illness or severe

immunocompromise likely remain infectious no longer than 20 days after symptom onset. Recovered persons can continue to shed detectable SARS-CoV-2 RNA in upper respiratory specimens for up to 3 months after illness onset, although at concentrations considerably lower than during illness, in ranges where replication-competent virus has not been reliably recovered and infectiousness is unlikely. The etiology of this persistently detectable SARS-CoV-2 RNA has yet to be determined. Studies have not found evidence that clinically recovered persons with persistence of viral RNA have transmitted SARS-CoV-2 to others. Infectious virus has not been cultured from urine or reliably cultured from feces (CDC unpublished data, Midgely 2020, Wölfel 2020); these potential sources pose minimal if any risk of transmitting infection and any risk can be sufficiently mitigated by good hand hygiene.

## G. Epidemiology

Coronavirus disease (COVID-19) is caused by SARS-COV2 and has been declared a pandemic. Initially, many of the patients at the epicenter of the outbreak in Wuhan, Hubei Province, China had some link to a large seafood and live animal market, suggesting that this is likely the zoonotic origin of COVID-19. Later, the virus spread person-to-person, and was subsequently reported outside Hubei and in countries outside China, including in the United States. The largest number of cases in New Jersey had illness onset in early to mid-April 2020. Initially, cases were concentrated in the northeastern part of the state, but each county in the state has been impacted. New Jersey COVID-19 data is posted online at [https://www.nj.gov/health/cd/topics/covid2019\\_dashboard.shtml](https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml) & <https://www.state.nj.us/health/cd/topics/ncov.shtml>.

# 2 CASE DEFINITION

**\*CSTE updated case definition: August 2020**

## INDIVIDUAL CASES

### A. Clinical Criteria

In the absence of a more likely diagnosis:

At least two of the following symptoms: fever (measured or subjective), chills, rigors, myalgia, headache, sore throat, nausea or vomiting, diarrhea, fatigue, congestion or runny nose.

**OR**

Any one of the following symptoms: cough, shortness of breath, difficulty breathing, new olfactory disorder, new taste disorder.

**OR**

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Severe respiratory illness with at least one of the following:

- Clinical or radiographic evidence of pneumonia, or
- Acute respiratory distress syndrome (ARDS)

### 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 specimen using a molecular amplification detection test.

*Presumptive laboratory evidence:*

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

*Supportive laboratory evidence:*

- Detection of specific antigen by immunocytochemistry in an autopsy specimen

### C. Epidemiologic Linkage

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

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

*\*\*Close contact is defined as someone who was within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to test specimen collection) until the time the patient is isolated; OR direct contact with infectious secretions from a patient with COVID-19. In healthcare settings, this may be defined as exposures of greater than a few minutes or more, depending on the type of exposure. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.*

### D. Vital Records Criteria

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

### E. Case Classification

*Confirmed:*

- Meets confirmatory laboratory evidence.

*Probable:*

- Meets presumptive laboratory evidence<sup>1</sup>.
- Meets clinical criteria AND epidemiologic evidence with no confirmatory laboratory testing performed for SARS-CoV-2.
- Meets vital records criteria with no confirmatory laboratory evidence for SARS-CoV-2

*Possible:*

- Any case that has an inconclusive or equivocal laboratory result for COVID-19. Upon subsequent testing, these individuals may be moved to another case status\*\*\*.
- Meets supportive laboratory evidence with no prior history of being a confirmed or probable case.

*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.

\* Depending on the laboratory performing the test, positive results may be reported as positive, presumptive positive, reactive, or detected.

\*\*\* 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, quarantine, social distancing, etc.), but keep case status as POSSIBLE.

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

## **OUTBREAK DEFINITIONS**

### **ACUTE CARE HOSPITALS**

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<sup>1</sup> NJDOH will be using the August CSTE case definition to classify all 2020 cases. Even if confirmatory negative RT-PCR test results are received within 2 days after a positive antigen test result (see [Laboratory Testing](#) section), the case status would remain as PROBABLE although public health measures would be halted based on the confirmatory negative RT-PCR result.

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- ≥2 cases of confirmed COVID-19 in a patient 7 or more days after admission for a non-COVID condition, with epi-linkage (overlap on the same unit or ward, or cared for by same HCP within 14-day time period)<sup>2</sup>
- ≥2 cases of confirmed COVID-19 in HCP with an epi-linkage (being within 6 feet of each other for 15 minutes or longer while working in the facility during the 14 days prior to onset of symptoms), who do not share a household, and are not listed as a close contact of each other outside of the workplace.

### CONGREGATE SETTINGS (OTHER THAN LTCF/LTACH)

- Two or more laboratory-confirmed (RT-PCR or antigen) COVID-19 cases among residents or staff with onsets occurring within a 14-day period or 1 laboratory-confirmed case and other symptomatic individuals.

### EDUCATIONAL SETTINGS<sup>3</sup>

- Two or more laboratory-confirmed (RT-PCR or antigen) COVID-19 cases among students or staff with onsets within a 14-day period, who are epidemiologically linked<sup>4</sup>, do not share a household, and were not identified as close contacts of each other in another setting during standard case investigation or contact tracing.
  - *Note: confirmed and probable secondary cases among students or staff in the educational setting should be classified as outbreak-associated. Individual cases outside of the educational setting that resulted from secondary transmission from an outbreak-associated case (e.g., a family member of a student or staff) should not be included in the outbreak case count.*

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

- Two or more laboratory-confirmed (RT-PCR or antigen) COVID-19 cases among workers at a facility with onset of illness within a 14-day period, who are epidemiologically linked within the workplace, do not share a household, and are not listed as a close contact of each other outside of the workplace during standard case investigation or contact tracing.

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<sup>2</sup> Healthcare Personnel (HCP) defined by CDC include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, 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)

<sup>3</sup> 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.

<sup>4</sup> Health departments should verify to the best extent possible that cases were present in the same setting during the same time period (e.g., same classroom, school event, school-based extracurricular activity, school transportation) within 14 days prior to onset date (if symptomatic) or specimen collection date for the first specimen that tested positive (if asymptomatic or onset date is unknown) and that there is no other more likely source of exposure (e.g., household or close contact to a confirmed case outside of educational setting).



- *Note: confirmed and probable cases among workers in a non-residential, non-healthcare workplace setting meeting the outbreak definition 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) 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.*

### **COMMUNITY CLUSTERS (NON-HOUSEHOLD)**

- Three or more laboratory-confirmed (RT-PCR or antigen) COVID-19 cases who are epidemiologically linked to each other with onset of illness within a 14-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).

**OUTBREAK CONCLUSION:** Outbreaks are considered concluded when there are no new symptomatic/asymptomatic probable or confirmed COVID-19 cases after 28 days (2 incubation periods) has passed since the last case's onset date or specimen collection date (whichever is later).

### **LONG-TERM CARE FACILITIES (LTCF)<sup>5</sup>, LONG-TERM ACUTE CARE HOSPITALS (LTACH) AND COMPREHENSIVE REHABILITATION HOSPITALS (CRH)**

LTCF/LTACH/CRH should report to LHD immediately by telephone:

- ≥1 probable or confirmed COVID-19 case in a patient/resident or HCP;
- ≥3 cases of acute illness compatible with COVID-19 in patients/residents with onset within a 72h period

The LHD should work with CDS and health care facilities on public health investigation and determine if an outbreak exists. Consult with CDS Epidemiologist and NJDOH Healthcare Professionals guidance: [https://www.state.nj.us/health/cd/topics/covid2019\\_healthcare.shtml](https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml)

### **LTCF/LTACH/CRH OUTBREAK DEFINITION**

- ≥1 facility-onset COVID-19 case in a patient/resident
  - Facility-onset COVID-19 infection in a patient/resident is defined as a confirmed diagnosis >14 days or more after admission for a non-COVID condition, without an exposure during the previous 14 days to another setting where an outbreak was known or suspected to be occurring unless there is confirmation of possible transmission or exposure through a breach in PPE.
    - *Does not apply to patients/residents who were positive for COVID-19 on admission to the facility and were placed into appropriate Transmission-*

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<sup>5</sup> New Jersey licensed Long-Term Care Facilities, Assisted Living Residences, Comprehensive Personal Care Homes, Residential Health Care Facilities, and Dementia Care Homes (collectively "LTCFs")

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*Based Precautions (TBP) OR patients/residents who were placed into TBP on admission and developed SARS-CoV-2 infection within 14 days after admission, unless there is confirmation of possible transmission or exposure through a breach in PPE.*

- $\geq 2$  laboratory-confirmed COVID-19 cases among HCP within a 14-day period.

NOTE: There will be situations where new cases of COVID-19 are reported to local health departments that might not meet the criteria of an outbreak due to increased testing in LTCFs. If new cases are identified at a healthcare facility among staff or patients/residents but a facility does not meet the criteria for an outbreak, there still may be public health action to determine if transmission occurred at the facility. To distinguish these scenarios, CDS will issue an "Investigation number" or "I-number" instead of an "Outbreak number/E-number." If an investigation at a facility reveals COVID-19 transmission or an outbreak is detected, the "I number" will change into an "E-number." Table 1 provides additional guidance on the differences between when a facility is in an active investigation or an outbreak and describes the public health actions that facilities should take for each scenario.

# COVID-19

<b>Table 1: Case and Outbreak Reporting and Investigation Requirements for COVID-19 in Post-acute Care Facilities</b>			
LTC Status Category	Criteria	Public Health Action or Recommendation	Resolution/Conclusion
Investigation  <i>Issue Investigation "I" Number</i>	1 probable or confirmed COVID-19 case in HCP	<ul style="list-style-type: none"> <li>• Perform facility-wide testing of all patients/residents (who have not tested positive in the previous 3 months) until at least 14 days have elapsed since the most recent positive result and during this 14-day period at least two weekly tests have been conducted with all individuals testing negative (LTCF refer to <a href="#">Testing in Response to a Newly Identified COVID-19 Case in Long-term Care Facilities</a> and LTACH/CRH refer to <a href="#">CDC's Interim Guidance on Testing Healthcare Personnel for SARS-CoV-2</a>).</li> </ul>	<ul style="list-style-type: none"> <li>• No new cases identified amongst HCP or patients/residents in at least 2 rounds of subsequent testing (14 days)</li> </ul>
Investigation  <i>Issue Investigation "I" Number</i>	≥ 1 probable or confirmed facility-onset COVID-19 case in a previously known positive patient/resident or HCP (> 3 months from previous illness onset or positive test)	<ul style="list-style-type: none"> <li>• Continue HCP testing, as directed. (LTCF refer to NJDOH Executive Directives 20-026 and LTACH/CRH refer to <a href="#">CDC's Interim Guidance on Testing Healthcare Personnel for SARS-CoV-2</a>).</li> <li>• Increase symptom monitoring in all patients/residents to per shift until 14 days have passed with no new cases identified.</li> </ul>	
Investigation  <i>Issue Investigation "I" Number</i>	≥ 2 new cases of probable or confirmed COVID-19 among patients/residents who have been in the facility <14 days (e.g. 2 patients/residents on observation unit)	<ul style="list-style-type: none"> <li>• Restrict indoor visitation, group activities and communal dining on affected units (LTCF refer to <a href="#">NJDOH Quick Reference ED No. 20-026</a>).</li> <li>• If the newly identified COVID-19 case was a new or re-admission (less than 14 days), the facility should alert the prior facility where the patient/resident was transferred/admitted from. That facility should identify patient/resident close contacts and assess HCP risk (LTCF refer to <a href="#">Testing in Response to a Newly Identified COVID-19 Case in Long-term Care Facilities</a> and LTACH/CRH refer to <a href="#">Guidance for COVID-19 Diagnosed and/or Exposed Healthcare Personnel</a>).</li> <li>• Implement Transmission-Based Precautions for patient/resident care on all affected units.</li> <li>• If the newly identified COVID-19 case was in a HCP who worked at additional facilities in the 48 hours prior to illness onset or specimen collection, the HCP or the LHD should notify</li> </ul>	
Investigation for COVID-19/Outbreak of unknown etiology  <i>Issue "E" Number</i>	≥ 3 cases of acute illness of unknown etiology compatible with COVID-19 in patients/residents or HCP with onset within a 72h period.	<ul style="list-style-type: none"> <li>• Implement Transmission-Based Precautions for patient/resident care on all affected units.</li> <li>• If the newly identified COVID-19 case was in a HCP who worked at additional facilities in the 48 hours prior to illness onset or specimen collection, the HCP or the LHD should notify</li> </ul>	<ul style="list-style-type: none"> <li>• No new cases identified amongst HCP or patients/residents in at least 2 rounds of subsequent testing (14 days)</li> <li style="text-align: center;">AND</li> <li>• Cases of acute illness compatible with COVID-19 in patients/residents or HCP test negative for SARS COV-2 and/or an alternate diagnosis is found<sup>6</sup></li> <li style="text-align: center;">AND/OR</li> </ul>

<sup>6</sup> Individuals can be infected with more than one virus at the same time. Co-infections with other respiratory viruses in people with COVID-19 have been reported. Therefore, identifying infection with one respiratory virus does not exclude SARS-CoV-2 virus infection.

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LTC Status Category	Criteria	Public Health Action or Recommendation	Resolution/Conclusion
Outbreak <i>Issue "E" Number</i>	≥ 1 facility-onset <sup>7</sup> probable or confirmed COVID-19 case in a patient/resident	<p>those facilities so they may conduct the appropriate contact tracing and investigation (see <a href="#">Guidance for COVID-19 Diagnosed and/or Exposed Healthcare Personnel</a>).</p> <ul style="list-style-type: none"> <li>Issue Outbreak Investigation "E" Number</li> <li>Perform facility-wide testing of all patients/residents (who have not tested positive in the previous 3 months) until at least 14 days have elapsed since the most recent positive result and during this 14-day period at least two weekly tests have been conducted with all individuals testing negative.</li> </ul>	<ul style="list-style-type: none"> <li>Meet the criteria outlined within the appropriate <a href="#">NJDOH Outbreak and Control Recommendations</a> and any additional public health guidance.</li> </ul>
Outbreak <i>Issue "E" Number</i>	≥ 2 probable or confirmed cases of COVID-19 in HCP with symptom onset or positive test within 14 days of each other	<ul style="list-style-type: none"> <li>Continue HCP weekly testing, as directed (LTCF refer to NJDOH Executive Directives 20-026 and LTACH/CRH refer to <a href="#">CDC's Interim Guidance on Testing Healthcare Personnel for SARS-CoV-2</a>).</li> <li>Conduct full outbreak investigation and recommendations in coordination with Facility/LHD/NJDOH (see <a href="#">Outbreak Management Checklist</a>).</li> </ul>	<ul style="list-style-type: none"> <li>No symptomatic/asymptomatic probable or confirmed COVID-19 cases after 28 days (2 incubation periods) has passed since the last case's onset date or specimen collection date (whichever is later)</li> </ul>

<sup>7</sup> Facility-onset SARS-CoV-2 infections refers to SARS-CoV-2 infections that originated in the nursing home. It does not refer to the following:

- Residents who were known to have COVID-19 on admission to the facility and were placed into appropriate Transmission-Based Precautions to prevent transmission to others in the facility.
- Residents who were placed into Transmission-Based Precautions on admission and developed SARS-CoV-2 infection within 14 days after admission, unless there is confirmation of possible transmission or exposure through a breach in PPE.

## 3 LABORATORY 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.

Viral testing for COVID-19 should be considered for:

- Individuals with signs or symptoms consistent with COVID-19
- Asymptomatic individuals with recent known or suspected exposure to SARS-CoV-2 to control transmission
- Asymptomatic individuals without known or suspected exposure to SARS-CoV-2 for early identification in special settings
- Individuals being tested to determine resolution of infection (i.e., test-based strategy for Discontinuation of Transmission-based Precautions)
- Individuals being tested for purposes of public health surveillance for SARS-CoV-2
- Individuals who are concerned about possible COVID-19 exposure due to higher risk activities (e.g., attending a large gathering where face coverings were not worn and social distancing was not implemented)

**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.

**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.

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.

**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 an 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. <https://www.cdc.gov/coronavirus/2019-ncov/lab/resources/antigen-tests-guidelines.html>

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.

In long-term and post-acute care settings, if clinicians wish to confirm a positive antigen test result for an asymptomatic patient/resident or HCP, they should order two RT-PCR tests, the first collected within 48 hours of the antigen test and a second collected at least 24 hours after the first RT-PCR test. If both RT-PCR tests are negative and no additional patients/residents or staff test positive, public health actions implemented in response to the positive antigen test result can be stopped. 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](https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml).

**Serology (antibody) testing** (e.g., IgG, IgA, IgM) for COVID-19 may be used to identify people who were previously infected with COVID-19. Antibodies in some persons can be detected within the first week of illness onset. SARS-CoV-2 infections are somewhat unusual because IgM and IgG antibodies arise nearly simultaneously in serum within 2 to 3 weeks after illness onset. Thus, detection of IgM without IgG is uncommon. How long IgM and IgG antibodies remain detectable following infection is not known and some persons do not develop detectable antibodies following infection. Recurrence of COVID-19 illness appears to be very uncommon, suggesting that the presence of antibodies could confer at least short-term immunity to infection with SARS-CoV-2. However, definitive data are lacking, and it remains uncertain whether individuals with antibodies (neutralizing or total) are protected against reinfection with SARS-CoV-2 or what concentration of antibodies is needed to confer protection.

Serology testing should not be used to diagnose current COVID-19 infection since antibody responses to infection may take days to weeks to be detectable; a negative serologic test does not rule out active infection; and a positive serologic test may reflect prior infection with a human coronavirus other than SARS-CoV-2. Due to the time from illness onset to when sufficient antibodies are detectable through testing, it is likely that public health investigation and control measures would be of limited utility. Serological testing should currently not be used for case detection or public health action. Serologic test results should not be used to make decisions about grouping persons residing in or being admitted to congregate settings, such as schools, dormitories, or correctional facilities; and should not be used to make decisions about returning persons to the workplace. There should be no change in clinical practice or use of personal protective equipment (PPE) by health care workers and first responders who test positive for SARS-CoV-2 antibody. This guidance may change as additional information is known about these tests.

<https://www.cdc.gov/coronavirus/2019-ncov/lab/resources/antibody-tests-guidelines.html> & [https://www.state.nj.us/health/cd/documents/topics/NCOV/COVID19\\_serology\\_overview.pdf](https://www.state.nj.us/health/cd/documents/topics/NCOV/COVID19_serology_overview.pdf)

**Specimens:** For viral tests, CDC recommends collecting and testing an upper respiratory specimen. Acceptable specimens vary by test kit and include:

- A nasopharyngeal (NP) specimen collected by a healthcare provider; or
- An oropharyngeal (OP) specimen collected by a healthcare provider; or
- A nasal mid-turbinate swab collected by a healthcare provider or by a supervised onsite self-collection (using a flocked tapered swab); or
- An anterior nares (nasal swab) specimen collected by a healthcare provider or by onsite or home self-collection (using a flocked or spun polyester swab); or
- Nasopharyngeal wash/aspirate or nasal wash/aspirate (NW) specimen collected by a healthcare provider; or
- Saliva specimens.

When it is clinically indicated (e.g., those receiving invasive mechanical ventilation), a lower respiratory tract aspirate or bronchoalveolar lavage sample is also an option. Testing for SARS-CoV-2 is rapidly evolving. Check FDA's SARS-CoV-2 page (<https://www.fda.gov/medical-devices/emergency-situations-medical-devices/faqs-diagnostic-testing-sars-cov-2>) for acceptable tests and collection methods. 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.

**Guidance for Interpreting COVID-19 Test Results:** <https://www.whitehouse.gov/wp-content/uploads/2020/05/Testing-Guidance.pdf>

**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/>.

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PHEL Testing Criteria: Public health testing (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, acute care 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 “NJPHL” to the lab name;
- Include the CDRSS Case ID# as the “CDS Approval 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](mailto:Virology.PHEL@doh.nj.gov) with the CDRSS # 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.

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](mailto:virology.PHEL@doh.nj.gov).

Current guidance on laboratory testing:

- New Jersey COVID-19 Testing Guidelines:  
[https://nj.gov/health/cd/topics/covid2019\\_professionals.shtml](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%202020.1.4%20SARS-CoV-2%20Testing%20at%20PHL.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>

## 4 PURPOSE OF SURVEILLANCE AND REPORTING

- To ensure that COVID-19 cases are quickly identified and appropriately isolated to prevent further disease transmission.
- To identify close contacts and provide recommendations on self-quarantine, social distancing, and movement restrictions, to prevent further disease transmission.
- To identify and manage 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

All healthcare providers, laboratories, and facilities performing testing for COVID-19 must report COVID-19-positive and negative laboratory- test results (molecular, antigen, serology) to public health authorities electronically through CDRSS. All reported cases must contain complete contact information for the patient and healthcare provider.

Outpatient providers and administrators of other facilities should request COVID-19 Quick Start access to CDRSS <https://cdrs.doh.state.nj.us/cdrss/login/loginPage> and report all laboratory test results electronically into CDRSS. Facilities/providers with a large volume of test reports to report should contact CDRSS Admin personnel to discuss alternatives for electronic reporting: [cdrs.admin@doh.nj.gov](mailto:cdrs.admin@doh.nj.gov). In the interim, providers and facilities should notify the local health department (LHD) by telephone and the LHD should enter the information in CDRSS (with the exception of negative serology results for LHDs only). Persons with pending COVID-19 test results do not need to be entered in CDRSS. LHDs should provide instructions on how to report test results into 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 their COVID Epidemiologist and [cdrs.admin@doh.nj.gov](mailto:cdrs.admin@doh.nj.gov).

### B. COVID-associated deaths

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Hospital administrators are asked to report COVID-19 associated deaths occurring within their facility electronically through CDRSS, including date of admission, date of discharge (date of death), 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. Documentation in CDRSS serves as public health notification; phone calls are not needed. \*\*If reporting staff don't have timely access to CDRSS, administrators should report COVID-19 associated deaths by telephone to their LHD. Information should still be entered into CDRSS as soon as is feasible.

Long-term care administrators, outpatient providers, and administrators of other facilities are asked to report COVID-19 associated deaths to their LHD by telephone. Reports should include deaths associated with a suspect or confirmed COVID-19 outbreak, even if the resident that died was not tested for COVID-19.

LHDs should immediately update CDRSS for all COVID-positive deaths, including 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 PROBABLE 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.

### D. Out-of-Jurisdiction Close Contacts

Within NJ: LHDs should enter contact information into the case in CommCare, add the contact's address into the address section, and transfer the contact if the contact lives in another county. If the contact lives in another LHD jurisdiction within their county, update the contact's address and unassign the contact from the case investigator. The LHD where the contact resides should close the contact record once the investigation is complete.

Out-of-State: If close contacts are identified who live outside of NJ, update CommCare with the correct address and transfer the contact to New Jersey. Please ensure the record has the contact's name, DOB, address, phone number and/or email, and date of last known exposure to the NJ COVID-19 case. Please email [CDS.COVD.M@doh.nj.gov](mailto:CDS.COVD.M@doh.nj.gov) the CDRSS Case ID# after it has been transferred to the state space in CommCare.

# 6 CASE INVESTIGATION

## A. Investigation

1. Timely investigation of COVID-positive cases and identification of close contacts is critical to prevent further disease transmission. All new COVID-positive cases will be transferred from CDRSS into CommCare (Login: <https://www.commcarehq.org/accounts/login/>, helpdesk: [oit-esd@tech.nj.gov](mailto:oit-esd@tech.nj.gov)) and should be interviewed accordingly. LHDs should enter all investigation information into CommCare including outbreak information (E# case linkage), which now ports over to CDRSS.

To minimize further transmission, COVID-19 cases should be interviewed within 24-hours and LHDs should identify and communicate with close contacts within 24 hours of case creation/contact identification. The level of disease transmission in each jurisdiction and the availability of local resources may determine if public health efforts should focus on identifying areas of potential exposure, all close contacts, or high-concern contacts (e.g., healthcare, long-term care, other congregate settings with vulnerable populations). Active cases should always take priority for investigation.

### Sufficient local capacity to investigate cases and contacts within 24 hours

When the case and contact workload is manageable, all cases should be investigated within 24 hours of case creation, isolation recommendations should be provided, and all close contacts should be solicited. All close contacts should be reached within 24 hours and provided with information on self-isolation and/or quarantine, testing, and be actively monitored to ensure compliance with recommendations and to quickly identify additional cases should symptoms develop. In addition, high-concern exposure sites (e.g., long-term care facilities, schools, large gatherings) should be contacted and provided with prevention recommendations.

### Insufficient local capacity to investigate cases and contacts within 24 hours

If the LINCS agency reaches  $\geq 20\%$  of cases with no outreach attempted, LHDs in that county should expand the number of staff working on COVID-19 case investigations. Strategies may include reassigning additional local/county resources, bringing on Medical Reserve Corps (MRC) volunteers, cross-training all staff on both case investigation and contact tracing, utilizing PCG staff for case investigation (if not already doing so), and/or requesting additional investigation/tracer resources from NJDOH. If there are still insufficient resources to handle the burden of COVID-19 reports, LHDs may prioritize investigations as follows:

**Case Investigation:** Investigating cases in a timely manner is the highest priority and is vital to informing containment/mitigation strategies. If all cases cannot be investigated in a timely manner, resources should be targeted towards investigating persons who are more likely to have many contacts or who may expose persons at greater risk for severe disease.

When reviewing cases in CommCare, or when receiving reports by telephone, the highest priority for investigation include<sup>8</sup>:

- Cases created in CommCare ≤7 days (followed by those created ≤14 days)
- Persons ≤ 18 and ≥ 65 years old
- Hospitalized patients
- Persons potentially associated with a cluster or outbreak or who may have exposed large numbers of people
- Healthcare or other critical infrastructure workers
- Persons known to live, attend, visit, or work in congregate settings including:
  - Healthcare facilities
  - Homeless shelters
  - Correctional facilities
  - K-12 schools or childcare centers
  - Colleges / universities
- Racial and ethnic minority groups

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*NOTE: When staff resources are sufficient to handle the volume of COVID-19 reports and your LINCS Agency is reaching more than 80% of cases for outreach, the LHDs within that county should pivot back to investigating all cases and identifying and creating records for all close contacts.*

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2. Reinfection / Repeat Testing: Reinfection with SARS-CoV-2 in recovered persons appears to be quite rare. Persons infected with related endemic human betacoronavirus appear to become susceptible again at around 90 days after onset of infection. Thus, for persons recovered from SARS-CoV-2 infection, a positive PCR during the 90 days after illness onset more likely represents persistent shedding of viral RNA than reinfection.

Repeat testing within 3 months after initial positive COVID-19 test: For persons previously diagnosed with symptomatic COVID-19 who remain asymptomatic after recovery, retesting is not recommended within 3 months after the date of symptom onset for the initial COVID-19 infection. If re-testing is performed within 3 months, re-isolation would not be indicated, and quarantine would not be recommended in the event of close contact with an infected person.

For persons who develop new symptoms consistent with COVID-19 <3 months after the date of initial symptom onset, if an alternative etiology cannot be identified by a provider, then the person may warrant retesting; consultation with infectious disease or infection control experts is recommended. Isolation may be considered during this evaluation based on consultation with an infection control expert, especially in the event symptoms develop within 14 days after

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<sup>8</sup> Some high-priority categories will not be known from reviewing reports in CommCare. Information can be supplemented via reporting relationships with community partners.

close contact with an infected person. For persons who never developed symptoms, the date of first positive RT-PCR test for SARS-CoV-2 RNA should be used in place of the date of symptom onset. If re-testing is performed within 3 months, there would be no need for re-isolation and quarantine would not be recommended in the event of close contact with an infected person.

Repeat testing beyond 3 months after initial positive COVID-19 test:

Apart from LTCFs/LTACHs, persons who have a positive viral test >3 months after symptom onset or initial viral test should be treated as a possible reinfection (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 contact tracing/management should be reinstated, and persons who are identified as close contacts should be quarantined (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Patients-with-Persistent-or-Recurrent-Positive-Tests>).

In LTCFs, CDC recommends a more conservative approach. If an individual tests positive (viral test) >3 months after an initial positive test, it should be managed as a new infection or re-infection and control measures should be implemented (Refer to Section 2, Table 1).

Repeat Testing and CDRSS: If repeat testing is performed < 6 months after the first PCR test result, 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 reinstated.”

If repeat testing is performed > 6 months after the first PCR test, create a new case in CDRSS, document the investigation findings, and note the previous case ID# in comments. Do not merge with previous case.

**B. Case Ascertainment and CDRSS Documentation**

- LHDs should investigate all positive viral test results (molecular or antigen), implement timely control measures, and classify cases according to the case definition.
- LHDs should link all COVID-19 cases (and deaths) associated with an outbreak (viral test - positive and clinically compatible with no test results) by entering the outbreak E# in **CommCare**. COVID-19 outbreak associated cases without laboratory test results should be manually entered into CDRSS 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 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 by LHDs.

PROBABLE CASES

- If LHDs become aware of cases meeting the PROBABLE case definition without laboratory evidence (meeting clinical and epidemiological criteria), they should be entered into CDRSS. Persons meeting epidemiological criteria are only those identified through public health investigation – a known close contact or in the context of a known outbreak setting. For persons identified as a close contact in one CDRSS case, if the contact develops symptoms that meet the case definition clinical criteria, the LHD should create a separate COVID-19 case for that person. Symptomatic close contacts should be considered for COVID-19 testing. Probable cases include cases identified as part of an outbreak that may not be tested for COVID-19. Classify per case definition.
  - If a known close contact develops symptoms and meets the PROBABLE case definition, but tests negative for COVID-19 **from 2 days before through 5 days after symptom onset**, the case status should be changed to NOT A CASE.

**Note:** LTCFs should refer to the *Appendix: Considerations for Interpreting Antigen Test Results in Nursing Homes* within the NJDOH [Testing in Response to a Newly Identified COVID-19 Case in Long-term Care Facilities](#) document.

- **Even if confirmatory negative RT-PCR test results are received within 2 days after a positive antigen test result (see [Laboratory Testing](#) section), the case status would remain as PROBABLE although public health measures would be halted based on the confirmatory negative RT-PCR result.**
- Deaths meeting PROBABLE criteria that are reported through the Electronic Death Reporting System (EDRS) (meeting vital records criteria) will be entered by CDS into CDRSS as PROBABLE/DHSS APPROVED. Due to the delay in receiving EDRS reports, the possibility of effective public health intervention is low. LHDs do NOT need to investigate death reports entered as PROBABLE/DHSS APPROVED.
  - 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).
- Contact Tracing: Contact tracing should be performed on PROBABLE cases. PROBABLE cases who haven't been tested for COVID-19 should be considered for testing if testing is available.

**C. Key CDRSS Fields Needed for COVID-19 Cases (most will migrate from CommCare)**

CDRSS Screen	Required Information
<b>Patient Info</b>	For COVID-positive cases, select subgroup 2019 NCOV
<b>Patient Personal Information</b>	Race and ethnicity are important to understand how novel diseases are impacting New Jersey residents
<b>Addresses</b>	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#.
<b>Clinical Status</b>	<ul style="list-style-type: none"> <li>• Illness onset date</li> <li>• Was patient hospitalized (complete for both YES and NO answers)</li> <li>• Pre-existing conditions (select NONE if applicable)</li> <li>• Patient died (complete for YES and NO answers); if YES, add in date of death</li> </ul>
<b>Medical Facility and Provider Information</b>	Patient Status For admitted patients (patient status = INPATIENT): <ul style="list-style-type: none"> <li>• Date of admission AND discharge (if died, date of discharge = date of death)</li> <li>• Was patient in ICU</li> <li>• Was patient on ventilator</li> </ul>
<b>Pregnancy</b>	Is patient pregnant
<b>Risk Factors</b>	Complete all
<b>Signs/Symptoms</b>	<ul style="list-style-type: none"> <li>• Enter responses for all default symptoms (YES and NO answers)</li> <li>• SENSORY DEFICIT – write “taste” and/or “smell” in attribute field if applicable</li> <li>• Add additional symptoms as needed</li> <li>• Enter ASYMPTOMATIC if applicable</li> </ul>
<b>Outbreak Information</b>	Link cases associated with a known outbreak (E-Number)
<b>Contact Tracing</b> <i>(if feasible given disease burden and resources)</i>	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)  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)
<b>Additional Requirements</b>	Complete all – these questions document high-concern exposures/contacts
<b>PUI – CDS Use Only</b>	This section is for CDS use only. No LHD entry needed.

# 7 CONTROLLING FURTHER SPREAD

## A. Isolation

COVID-positive symptomatic cases: Persons should be told to self-isolate, at home if symptoms are mild, or at a hospital if clinically indicated until –

1. At least 24 hours have passed since resolution of fever without the use of fever-reducing medications **AND** improvement in symptoms; **AND**,
2. At least 10 days have passed *since symptom onset*.

\*A limited number of persons with severe illness or who are severely immunocompromised may produce replication-competent virus beyond 10 days, that may warrant extending duration of isolation for up to 20 days after symptom onset.

To determine if someone meets criteria for severe illness or severely immunocompromised, LHDs should ask hospitalized individuals if they required supplemental oxygen and if they were in the ICU and ask all individuals if they have cancer, untreated HIV, or other medical conditions that severely impact the immune system, or if they are taking long-term steroids or other medications that can severely impact the immune system. If the individual answers yes to any of these questions, inform the individual that persons with severe illness or who are severely immunocompromised can shed COVID-19 virus for a longer period of time, and that it is recommended that the individual remain on isolation until at least 24 hours have passed since resolution of fever without the use of fever-reducing medications **AND** improvement in symptoms; **AND** at least 20 days have passed since symptom onset.

Except for persons who are severely immunocompromised (e.g., medical treatment with immunosuppressive drugs, bone marrow or solid organ transplant recipients, inherited immunodeficiency, poorly controlled HIV), a test-based strategy is no longer recommended to discontinue isolation. For severely immunocompromised persons, and in consultation with infectious disease specialists, if a test-based strategy is used, cases should self-isolate until there is –

1. Resolution of fever without the use of fever-reducing medications; **AND**
2. Improvement in symptoms; **AND**
3. Negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive respiratory specimens collected  $\geq 24$  hours apart (total of two negative specimens).



COVID-positive asymptomatic cases: Persons who test positive for COVID-19 but who have not had any symptoms should self-isolate until 10 days have passed since the date of specimen collection and with no subsequent illness. Except for persons who are severely immunocompromised, a test-based strategy is no longer recommended to discontinue isolation. For severely immunocompromised persons, and in consultation with infectious disease specialists, if a test-based strategy is used, asymptomatic persons should self-isolate until receiving negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive respiratory specimens collected  $\geq 24$  hours apart (total of two negative specimens).

Persons who Re-Test Positive for COVID-19 after discontinuing isolation precautions: Persons who have a positive molecular or antigen test  $>3$  months after an initial positive viral test should be treated as a possible reinfection (new case). Appropriate isolation precautions and contact tracing/management should be reinstated. Isolation should be discontinued after meeting criteria for the symptom-based OR test-based strategy. Refer to Section 6A for additional guidance on persons who re-test positive after discontinuing isolation and/or transmission-based precautions.

Pending COVID test results: Persons who are symptomatic should follow home isolation guidance until their test results are available. IF NEGATIVE for COVID-19 persons should stay home and practice social distancing until 24 hours after resolution of fever and symptom improvement. Home isolation should be based on the alternate diagnosis, if available.

Persons with COVID-19 compatible symptoms who are not tested: Persons should be advised to stay on home isolation and follow the same guidance as those who test positive.

References:

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>;
- [https://nj.gov/health/cd/documents/topics/NCOV/COVID-QuickRef\\_Discont\\_Isolation\\_and\\_TBP.pdf](https://nj.gov/health/cd/documents/topics/NCOV/COVID-QuickRef_Discont_Isolation_and_TBP.pdf).

Healthcare workers who test positive for COVID-19: Healthcare workers 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 on discontinuation of isolation precautions for additional information, test-based clearance, and special precautions for healthcare workers: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html>; [https://www.state.nj.us/health/cd/topics/covid2019\\_healthcare.shtml](https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml).

After returning to work, HCP should wear a facemask for source control at all times while in the healthcare facility until all symptoms are completely resolved or at baseline. A facemask for source control does not replace the need to wear an N95 or higher-level respirator (or other recommended PPE) when indicated, including when caring for patients with suspected or confirmed COVID-19. Of note, N95 or other respirators with an exhaust valve might not provide

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source control. After this time period, these HCP should revert to their facility policy regarding universal source control during the pandemic.

### B. Contact Management

1. A close contact is defined as:

a) Being within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to test specimen collection) until the time the patient is isolated.

OR

b) having direct contact with infectious secretions of a COVID-19 case (e.g., being coughed or sneezed on).

At this time, differential determination of close contact for those using masks or for the use of surgical face masks or respirators outside of a healthcare setting is not recommended. Therefore, the determination of close contact should be made irrespective of whether the person with SARS-CoV-2 infection or the contact was wearing a cloth or disposable mask; or if they were wearing a surgical face mask or respirator outside of a healthcare setting.

2. Timing for identifying close contacts:

- Contact with a symptomatic COVID-19 case (laboratory-confirmed RT-PCR or antigen or clinically compatible) starting from 48 hours before symptom onset until the case meets criteria for discontinuing home isolation, OR
- Contact with an asymptomatic COVID-19 case (laboratory-confirmed RT-PCR or antigen) starting from 2 days prior to the date of specimen collection until the case meets criteria for discontinuing home isolation.

### 3. Public Health Recommendations for Close contacts

Close contacts should be identified and provided with information on self-isolation and/or quarantine and testing. If local resources allow, LHDs should actively monitor close contacts to ensure compliance with recommendations and to quickly identify additional cases. NJDOH has guidance LHDs can send to close contacts describing these recommendations: [https://nj.gov/health/cd/topics/covid2019\\_professionals.shtml](https://nj.gov/health/cd/topics/covid2019_professionals.shtml). Close contacts should be advised to:

1. Self-quarantine at home and monitor for symptoms for 14 days since their last close contact with someone with COVID-19;

2. If symptomatic, consult a healthcare provider and seek testing right away; (if negative, continue 14-day quarantine)
3. If asymptomatic, seek testing 5-7 days after last exposure (if negative, continue 14-day quarantine);
4. If symptoms develop during quarantine, consult a healthcare provider, seek testing, follow guidelines for isolation, and notify the LHD.

*Note: Household contacts of a confirmed or probable COVID-19 case should self-quarantine for 14 days AFTER their last close contact. Many household contacts will not be able to avoid continued close contact with infected household members. In these cases, close contacts should continue to quarantine until 14 days AFTER the COVID-19 person's isolation ends. If, however, the infected family member can successfully isolate in a separate bedroom away from other household members, household close contacts should quarantine for 14 days from the date of their last close contact.*

Contacts of contacts: Testing, symptom monitoring or special management for people exposed to asymptomatic people with potential exposures to COVID-19 (such as in a household), i.e., "contacts of contacts;" is not recommended.

Previous COVID-19 positive (viral test) cases and new exposure as a close contact: A person who tested positive for COVID-19 (viral test), has clinically recovered from COVID-19 and then is identified as a contact of a new case within 3 months of symptom onset of their most recent illness does not need to be quarantined or retested for SARS-CoV-2. However, if a person is identified as a contact of a new case 3 months or more after symptom onset, they should follow quarantine recommendations for contacts.

#### 5. Sufficient local capacity to investigate cases and contacts within 24 hours

When the case and contact workload is manageable, all cases should be investigated within 24 hours of case creation and all close contacts should be solicited. All close contacts should be reached within 24 hours and provided with information on self-isolation and/or quarantine, testing, and be actively monitored to ensure compliance with recommendations and to quickly identify additional cases should symptoms develop. In addition, high-concern exposure sites (e.g., long-term care facilities, schools, large gatherings) should be contacted and provided with prevention recommendations.

#### 6. Insufficient local capacity to investigate cases and contacts within 24 hours

If the LINCS agency reaches  $\geq 20\%$  of cases with no outreach attempted, and local resources are inadequate, instead of soliciting information on all close contacts, ask specifically about CDC Priority 1 and 2 contacts (Box 4). Create records only for Priority 1 and 2 contacts in CommCare (unless Priority 1 or 2, do not create household contacts in CommCare).

## Box 4. Close Contact Evaluation and Monitoring Hierarchy

*EVALUATE/MONITOR CLOSE CONTACTS WHO ARE:*

### PRIORITY 1

- Hospitalized patients
- Healthcare personnel (HCP)
- First responders (e.g., EMS, law enforcement, firefighters)
- Individuals living, working or visiting acute care, skilled nursing, mental health, and long-term care facilities
- Individuals living, working or visiting community congregate settings (e.g., correctional facilities, homeless shelters, educational institutions, mass gatherings, and workplaces including production plants)
- Member of a large household living in close quarters
- Individuals who live in households with a higher risk individual or who provide care in a household with a higher risk individual (Note: Household members who likely had extensive contact with a patient with COVID-19 should constitute the highest risk close contacts.)

### PRIORITY 2

- [Critical infrastructure workers](#)\*
- Individuals 65 years of age and older
- Individuals at [higher risk for severe disease](#)
- Pregnant people

### PRIORITY 3

- Individuals **with** [symptoms](#) who do not meet any of the above categories

### PRIORITY 4

- Individuals **without** symptoms who do not meet any of the above categories

*\*Consider moving to Priority 1 any critical infrastructure worker who works closely with other critical infrastructure workers and/or is in close contact with large numbers of people (e.g., transportation, food service).*

LHDs should prioritize high-concern contact settings for prompt follow-up to ascertain if there are additional cases and to provide public health recommendations and reporting procedures should additional cases be detected. High-concern settings include:

- Healthcare settings (e.g., acute care, post-acute care, long-term care, residential mental health, outpatient healthcare);
- First responders (e.g., EMS, law enforcement, firefighters) and other critical infrastructure worksites (e.g., food production, government services);
- Community congregate settings (e.g., correctional facilities, homeless shelters, group homes, educational institutions, mass gatherings); and
- Persons at higher risk of severe illness (e.g., persons  $\geq 65$  years, those with underlying medical conditions, or those who are pregnant).

Additional contact tracing strategies that can be used to conserve public health resources include:

- Relying on others to provide public health recommendations to close contacts. This strategy may be considered in the following situations:
  - Household members. Provide recommendations to the case-patient as part of case investigation and ask them to share with household.
  - Ask case-patient to notify their close contacts and other close contacts they know personally and to provide public health recommendations.
- Suspending active contact monitoring during the 14-day monitoring period unless there is an automated monitoring process.

References: <https://www.cdc.gov/coronavirus/2019-ncov/php/open-america/contact-tracing-resources.html>; <https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html>

## C. Managing Special Situations

### Healthcare Workers

Healthcare workers with COVID-19 should follow guidance provided to them by their occupational health team and their employer. NJDOH has online tools that healthcare facilities can use to assess exposure risk and implement employee isolation or quarantine policies: [https://www.state.nj.us/health/cd/topics/covid2019\\_healthcare.shtml](https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml)

### Critical Infrastructure Workers

To ensure continuity of operations of essential functions, CDC advises that critical infrastructure workers may be permitted to continue work following potential exposure to COVID-19, provided they remain asymptomatic and additional precautions are implemented to protect them and the community. Employers should screen exposed but asymptomatic essential workers for temperature and symptoms, ideally before entry into the facility; staff should monitor for symptoms, wear a mask at all times, and maintain social distancing while in the workplace for 14 days after last exposure; and there should be routine cleaning and disinfection of all workplace areas. <https://www.cdc.gov/coronavirus/2019-ncov/downloads/critical-workers-implementing-safety-practices.pdf>

### Emergency Management Services

Asymptomatic EMS providers who cared for a symptomatic patient who was tested but not yet resulted do not need to be furloughed. If the result for the patient comes back positive then EMS providers are risk assessed using the NJDOH healthcare provider risk assessment documents at [https://www.nj.gov/health/cd/topics/covid2019\\_healthcare.shtml](https://www.nj.gov/health/cd/topics/covid2019_healthcare.shtml). If the EMS

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provider is symptomatic, they should not report to work, and follow their agency's sick leave policies.

### Group Homes

There are a variety of group homes that provide services for a variety of persons, including youth, persons with physical or mental health disabilities, needing substance use treatment, etc. Refer to CDC Guidance for Shared or Congregate Housing for guidance to prevent spread in these settings <https://www.cdc.gov/coronavirus/2019-ncov/community/shared-congregate-house/guidance-shared-congregate-housing.html> and Guidance for Group Homes for Individuals with Disabilities <https://www.cdc.gov/coronavirus/2019-ncov/community/group-homes.html>. These documents do not address infection prevention and control in healthcare settings. If a facility offers healthcare services, please consult CDC [Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 \(COVID-19\) in Healthcare Settings](#).

### Long-Term 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 HCP [https://www.state.nj.us/health/cd/topics/covid2019\\_healthcare.shtml](https://www.state.nj.us/health/cd/topics/covid2019_healthcare.shtml). The plan should include:

- Use of standard and transmission-based precautions which includes appropriate use of personal protective equipment;
- Implement 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;

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

**PPE Shortages:** LTC facilities are to report their PPE inventory on a daily basis, in accordance with EO 111, to <https://report.covid19.nj.gov>. Facilities in need of PPE can receive PPE based on the information included in this daily reporting and working with their county OEM.

**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 (see Healthcare Facility Complaints) to determine operational capacity and compliance of the facility.

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

- CDC: <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/prevent-spread-in-long-term-care-facilities.html>
- NJ: [https://nj.gov/health/cd/topics/covid2019\\_healthcare.shtml](https://nj.gov/health/cd/topics/covid2019_healthcare.shtml)

### **Healthcare facility complaints**

Filing a complaint can be done online at [https://www.nj.gov/health/healthfacilities/file\\_complaint.shtml](https://www.nj.gov/health/healthfacilities/file_complaint.shtml) or by calling the Complaint Hotline: 1-800-792-9770 seven days a week. Patients, health care facility employees and other members of the public may file complaints about hospitals, ambulatory surgery centers, home health agencies, nursing homes, assisted living facilities, comprehensive personal care homes, adult medical day care, pediatric medical day facilities, and many other licensed acute- and long-term care facilities.

### **New Jersey Substance Abuse Treatment Facilities**

To register a complaint regarding any substance use treatment facility in New Jersey, call 1-877-712-1868 during business hours and speak with the county coordinator. After hours, call the same number and leave a message and your call will be returned the next business day.

### **Schools and Daycare Facilities**

CDS 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](https://www.state.nj.us/health/cd/topics/covid2019_schools.shtml). In addition, Executive Order 175 provides school reopening requirements. <https://nj.gov/infobank/eo/056murphy/pdf/EO-175.pdf>. 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 reopening guidance for schools should be addressed to each county's office of education: <https://www.nj.gov/education/about/counties/>.

### **Institutes of Higher Education**

CDS guidance for Institutes of Higher Education is posted online at [https://www.state.nj.us/health/cd/topics/covid2019\\_schools.shtml](https://www.state.nj.us/health/cd/topics/covid2019_schools.shtml).

### **Homeless or other Shelters**

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

<https://www.cdc.gov/coronavirus/2019-ncov/community/homeless-shelters/index.html>

### **Personal Protective Equipment Use/Supply**

Facilities needing PPE should submit their inventory at <https://report.covid19.nj.gov/>. Facilities are also 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/>

### **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:

<https://www.nj.gov/health/me/about-us/contact/>.

### **Airline/Cruise Ship Exposure**

If a COVID-positive case traveled on a commercial flight or cruise ship while infectious (including 48 hours prior to symptom onset/date of specimen collection), enter the following information into CommCare/CDRSS and notify your CDS COVID-19 Epidemiologist: illness onset date, symptoms, date of specimen collection, airline/cruise ship name, flight number, seat/cabin #, date & airport/port of departure, date & airport/port of arrival.

## **D. Preventive Measures**

Until there is a vaccine widely available for COVID-19, social distancing, respiratory etiquette, hand hygiene, self-isolation and quarantine remain key steps in preventing infection. NJDOH has resources on prevention available at

[https://nj.gov/health/cd/topics/covid2019\\_community.shtml](https://nj.gov/health/cd/topics/covid2019_community.shtml). CDC recommends wearing cloth or disposable masks in public settings, particularly where other social distancing measures are difficult to maintain. Masks may slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others. Resources for masks – how to wear, how to wash, are available at <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>.

### **International Travel**



Persons who participated in higher risk activities or think they may have been exposed to COVID-19 before or during their trip should stay home as much as possible during the 14 days after arrival; avoid being around people at higher risk for severe illness from COVID-19; and consider getting tested for COVID-19. Higher risk activities include: travel to a county at high risk of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/travelers/map-and-travel-notices.html>); going to a large social gathering like a wedding, funeral, or party; attending a mass gathering like a sporting event, concert, or parade; being in crowds – for example, in restaurants, bars, airports, bus and train stations, or movie theaters; and traveling on a cruise ship or river boat.

### **Domestic Travel Advisories**

Check <https://covid19.nj.gov/> for NJ domestic travel advisories. The State has issued an incoming travel advisory that all individuals entering New Jersey from states with a significant spread of COVID-19 should quarantine for 14-days after leaving that state. The self-quarantine is voluntary, but compliance is expected. For information about contacting persons arriving from one of these states by air travel, LHDs should contact the NJDOH Office of Local Public Health.

### **Cleaning and disinfection**

Routine cleaning and disinfection procedures are appropriate. Refer to List N on the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2, the virus that causes COVID-19: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

### **Additional Information**

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

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