Centers for Disease Control and Prevention

Quarantine and Isolation

Guidance for Maritime Vessels on the Mitigation and Management of COVID-19

Cruise Ships

Non-Passenger Carrying Vessels

Summary of Recent Changes

- Combined the guidance for all maritime vessels
- Updated to note that vaccination status is no longer used to inform decisions about testing and management
- Updated guidance for testing and management of symptomatic, infected, and exposed persons to align with current CDC guidance

Key Points

- This guidance is for **cruise ships** and **non-passenger carrying vessels** (e.g., cargo/container ships, bulk carriers, tanker ships, offshore ships, special purpose ships). Other passenger-carrying vessels (such as ferries or entertainment cruises) may also find this guidance useful as they develop their operational procedures.
- CDC recommends all travelers (passengers and crew) be up to date with their COVID-19 vaccines.
- According to federal regulations, CDC requires the master of a ship arriving from a non-U.S. port destined for a U.S. port to immediately report any death or ill person (as defined by CDC), among the ship's passengers or crew.
- Maritime travel presents a unique combination of health concerns where individuals from diverse regions, brought together in the often crowded, semi-enclosed, environments on board ships, can spread SARS-CoV-2, the virus that causes COVID-19.
- Preventive measures, including avoiding crowded areas, and wearing high-quality masks or respirators, are essential to maintaining ship operations when COVID-19 cases are identified onboard.

Purpose

This document provides guidance for preventing the spread of SARS-CoV-2 among passengers and crew during and after a voyage, including personal protective measures and cleaning and disinfection recommendations, management of sick or exposed persons on board, and reporting suspected or confirmed cases to CDC. Maritime vessel operators should carefully consider and incorporate these recommendations when developing their own health and safety protocols.

This guidance is based on the best available science regarding the subject areas covered. CDC will re-evaluate this guidance periodically and update the guidance as needed.

Cruise Ship Guidance

Onboard COVID-19 Response Plans

Shoreside Response Plans

Onboard COVID-19 Response Plans

Cruise ships should develop and maintain COVID-19 response plans to prevent and mitigate introduction and onboard transmission of SARS-CoV-2. These plans should incorporate:

- Terminology and definitions that align with how CDC uses and defines the following terms: "confirmed COVID-19 [1]," "COVID-19-like illness [2]," "close contact," "up to date with COVID-19 vaccines," and "isolation"
- Surveillance protocols to detect COVID-19-like illness and confirmed COVID-19 among travelers
- COVID-19 testing protocols that align with CDC guidance (see below)
- Case and close contact management protocols, including how to increase capacity (e.g., of isolation cabins, personnel) in case of an outbreak, and time frames for isolation and subsequent masking of cases and testing and masking of close contacts
- Medical facility protocols that address staffing—including number and types of medical staff—and maintaining equipment and supplies in sufficient quantities to provide hospital level of care (e.g., ventilators, oxygen, high-quality masks or respirators, and therapeutics) for infected patients, and personal protective equipment for staff, without the immediate need to rely on shoreside hospitalization
- Procedures for disembarking travelers with COVID-19 who need a higher level of care than can be provided on board
- Training protocols for all crew on COVID-19 prevention, mitigation, and response activities
- Educational materials for passengers to communicate COVID-19 prevention measures on board
- Cleaning and disinfection protocols

[1] Confirmed COVID-19 means laboratory confirmation for SARS-CoV-2, the virus that causes COVID-19, by viral test.

[2] COVID-19-like illness clinical criteria include the following:

- At least one or more of the following symptoms: fever, cough, difficulty breathing, shortness of breath, new olfactory disorder, or new taste disorder; OR
- At least two or more of the following symptoms: sore throat, nasal congestion, runny nose (rhinorrhea), chills, rigors, muscle or body aches (myalgias), headache, fatigue, vomiting, or diarrhea in the absence of a non-infectious diagnosis as determined by the ship's physician (e.g., allergies); OR
- Severe respiratory illness with at least one of the following:
  - Clinical or radiographic evidence of pneumonia,
  - Acute respiratory distress syndrome (ARDS).

Shoreside Response Plans

Cruise ships operators are recommended to develop and maintain shoreside response plans to prevent and mitigate the introduction of SARS-CoV-2 to port communities. When developing their response plans, cruise ship operators should coordinate with local health authorities and U.S. port authorities where the cruise ship operator intends to conduct passenger voyages and all health departments exercising jurisdiction over those ports.

- For the purpose of this guidance document only, "local health authorities" refers to all health departments responsible for implementing state, territorial, and local laws relating to public health (e.g., city, county, territorial, and/or state health departments) and exercising jurisdiction over the U.S. ports where the cruise ship operator intends to conduct passenger operations.
- For the purpose of this guidance document only, "U.S. port authorities" refers to the local officials responsible for exercising oversight and control over the U.S. ports where the cruise ship operator intends to conduct passenger operations.

Cruise ship operators are recommended to include the following components in their shoreside response plans:

Port Operation Components to Consider in the Shoreside Response Plans

(Relating to maintaining the health and safety of travelers and port personnel)

- Embarkation procedures that the cruise ship operator intends to use during passenger voyages
- Procedures for day-of-embarkation screening for signs and symptoms of COVID-19 and any planned COVID-19 testing of travelers, including testing locations and management of individuals who test positive and their close contacts
- Procedures for reporting COVID-19 cases identified during a voyage to local authorities (if requested), including thresholds for reporting, timelines, reporting mechanisms, and local points of contact
    - Reporting procedures, if any, should be incorporated into the plan and may be in addition to—but not replace—regulatory requirements to report to CDC and other federal agencies.
- Disembarkation procedures (e.g., separate disembarkation routes/times for travelers with suspected or confirmed COVID-19, passenger pick-up, luggage retrieval, and passenger transportation) that will be implemented in the event of an outbreak of COVID-19 onboard the ship
- Procedures for routine and outbreak-level cleaning in areas travelers are reasonably expected to gather or otherwise use, including terminals, restrooms, and transportation vehicles under a cruise ship operator's control (e.g., buses, shuttle vans)

Medical Care Components to Consider in the Shoreside Response Plans

(Relating to medical care, medical evacuation, and medical transport for travelers in need of care)

- Protocols that avoid medical evacuations at sea to the extent possible, for either COVID-19 or other medical conditions (including if onboard medical capacity is reduced due to COVID-19 cases)
    - Protocols should rely on commercial resources (e.g., ship tender, chartered standby vessel, chartered airlift) for unavoidable medical evacuation at sea and be designed to minimize the burden to the greatest extent possible on federal, state, and local government resources, including U.S. Coast Guard resources
- Protocols for contacting emergency medical services while at port for urgent circumstances not covered by the medical care component of the plan (e.g., a medical emergency not related to COVID-19, such as a heart attack)
- Procedures for providing emergency medical transportation of critically ill persons with suspected or confirmed COVID-19 from the ship to a shoreside medical facility in such a manner as to minimize potential for exposure
- Considerations for the potential medical care needs of travelers including the capacity of local public health, port authority, hospital, and other emergency response personnel to respond to an onboard outbreak of COVID-19
    - Considerations should include contingency planning to provide medical care to travelers in the event of limited hospital beds, medical personnel, or other factors potentially limiting the capacity of the local public health and medical infrastructure.

Housing Components to Consider in the Shoreside Response Plans

(Relating to housing plans after disembarkation of persons with suspected or confirmed COVID-19 and close contacts)

- Contingency plans for shoreside housing after disembarkation of travelers in need of continued isolation or who are recommended to not travel after completing isolation
    - CDC guidance for isolation should be considered when planning for shoreside housing
- Contingency plans in the event an outbreak requires the ship to be taken out of service (e.g., where the ship will be physically located—such as at the pier or at anchor—during the time the ship is out of service)
    - Considerations should include details about when a cruise line would need to consider this option (e.g., a sudden and large outbreak, an outbreak that compromises the cruise ship personnel's ability to manage and/or safely operate the ship, inability to control an outbreak over multiple voyages)
- Procedures for the transportation of all travelers needing shoreside housing from the ship to the shoreside housing facilities, and from the shoreside housing facility to the medical facilities or healthcare systems (if needed), with precautions in place to avoid exposure of vehicle operators, housing facility staff, and medical facility personnel
- Consider the following needs of travelers being housed in a shoreside facility when developing contingency plans:
    - Availability and frequency of testing
    - Availability of mental health services, pharmacy delivery, and other essential services
    - Access to medical care
    - A check-in process, including delivery of luggage, designed insofar as possible to minimize contact between infected travelers and unexposed persons
    - Points of contact for travelers in isolation to notify if their symptoms worsen and they need medical care
    - Procedures to minimize contact between travelers in isolation and support staff, while still ensuring the delivery of essential services:
        - Food delivery
        - Laundry services
        - Cleaning and linen change
        - Garbage pick-up
        - Cleaning and disinfection
    - Procedures to return travelers to their home communities after completing isolation or when no longer advised not to travel

Infection Prevention and Control Plan

Infection prevention and control (IPC) are critical to reducing the spread of SARS-CoV-2. Each cruise ship should maintain a written **Infection Prevention and Control Plan (IPCP)** that details standard procedures and policies to specifically address infection control and cleaning/disinfection procedures to reduce the spread of COVID-19.

To reduce the spread of SARS-CoV-2, cruise ship operators should include the following as part of a written IPCP:

- Duties and responsibilities of each department and their staff for all passenger and crew public areas.
- Steps in IPC management and control and the triggers required for action at each step. At a minimum, triggers should address a graduated approach to IPC management in response to increasing case counts.
- Disinfectant products or systems used, including the surfaces or items the disinfectants will be applied to, concentrations, and required contact times. Use disinfectant products or systems that are listed on the Environmental Protection Agency (EPA) List N: Disinfectants for Coronavirus (COVID-19) .
- Procedures for informing passengers and crew members that a threshold of COVID-19 has been met or exceeded. This section should address the procedures for notification of passengers and crew currently onboard the ship and those embarking the vessel on the subsequent voyage.
- Graduated procedures for returning the vessel to normal operating conditions after a threshold of COVID-19 has been met, including de-escalation of cleaning and disinfection protocols.
- Procedures to protect passengers and crew from exposure to disinfectants, if not already included in the ship's safety management system. At a minimum, this should include the following:
    - Safety data sheets (SDSs)
    - PPE per CDC guidance for crew
    - Health and safety procedures to minimize respiratory and dermal exposures to both passengers and crew

Cleaning and Disinfection

Current evidence suggests that COVID-19 may remain viable for hours to days on surfaces made from a variety of materials. Cleaning of visibly dirty surfaces followed by disinfection is a best practice measure for prevention of COVID-19 transmission.

Frequent, routine cleaning and disinfection of commonly touched surfaces such as handrails, countertops, and doorknobs with an EPA-registered disinfectant effective against coronaviruses is strongly recommended. Additional information on cleaning and disinfecting on cruise ships can be found in the *Cleaning and Disinfection* section below and CDC's Vessel Sanitation Program 2018 Operations Manual [PDF – 291 pages].

No additional treatment of wastewater is needed on cruise ships.

Ventilation

- Ensure ventilation systems operate properly for the occupancy level for each space.
  - Make sure air filters are properly sized and within their recommended service life.
  - Inspect filter housing and racks to ensure appropriate filter fit and minimize air that flows around, instead of through, the filter.
- Increase the introduction of outdoor air:
  - Open outdoor air dampers beyond minimum settings to reduce or eliminate HVAC air recirculation.
  - Open windows and doors, when weather conditions allow, to increase outdoor air flow. Do not open windows and doors if doing so poses a safety or health risk.
- Use fans to increase the effectiveness of open windows:
  - Avoid placing fans in a way that could potentially cause contaminated air to flow directly from one person to another.
- Rebalance or adjust HVAC systems to increase total airflow to occupied spaces when possible.
- Turn off any demand-controlled ventilation (DCV) controls that reduce air supply based on occupancy or temperature during occupied hours.
- Improve central air filtration:
  - Increase air filtration to as high as possible without significantly reducing design airflow. Increased filtration efficiency is especially helpful when enhanced outdoor air delivery options are limited.
  - Filters with a higher number of Minimum Efficiency Reporting Value (MERV) have higher efficiency and ability to capture particles from the air. High-Efficiency Particulate Air (HEPA) filters can achieve at least 99.97% removal of viral particles in the air.
- Consider portable high-efficiency particulate air (HEPA) fan/filtration systems to enhance air cleaning (especially in higher risk areas such as the medical center or areas frequently inhabited by people with a higher likelihood of having COVID-19 and/or an increased risk of getting COVID-19).
- Consider using ultraviolet germicidal irradiation (UVGI) as a supplemental treatment to inactivate SARS-CoV-2, especially if options for increasing room ventilation and filtration are limited. Upper-room UVGI systems [PDF – 87 pages] can be used to provide air cleaning within occupied spaces, and in-duct UVGI systems can help enhance air cleaning of recirculated air inside central ventilation systems.

COVID-19 Vaccines

CDC recommends *all* travelers be up to date with their COVID-19 vaccines. In addition to the protection COVID-19 vaccines provide to individual travelers in preventing severe illness or death from COVID-19, having a high proportion of travelers on board who are up to date with COVID-19 vaccines reduces the likelihood that cruise ships' medical centers will be overwhelmed by cases of COVID-19.

Surveillance for COVID-19

- For cruise ships falling under CDC's reporting jurisdiction, the Enhanced Data Collection (EDC) During COVID-19 Pandemic Form is an interim replacement for the:

    - Maritime Illness and Death Investigation form [PDF – 4 pages] for individual cases of COVID-19, typically reported to CDC quarantine stations.
    - Maritime Conveyance Cumulative Influenza/Influenza-Like Illness (ILI) form [PDF – 1 page] for each international voyage, formerly requested by CDC.
- In lieu of the above reporting forms, CDC requests daily submission of the EDC form. This EDC Form will be used to conduct surveillance for COVID-19 on board cruise ships using cumulative reports of confirmed COVID-19 [1] and COVID-19-like illness [2], which includes acute respiratory illness (ARI), influenza-like illness (ILI), and pneumonia.
- Access to the online EDC form has been provided to cruise lines by CDC. Cruise lines that do not have access should contact CDC (email maritimeadmin@cdc.gov).
- If the cruise ship elects to not submit the EDC form daily, then the ship is *required* to report individual cases of COVID-19 that meet CDC's definition of "ill person" via the Maritime Illness and Death Investigation form [PDF – 4 pages].
- Cruise ships must continue to report all deaths and other illnesses as defined by CDC to the CDC quarantine station at or nearest the U.S. port of arrival.

Maintaining COVID-19 Surveillance Records:

- Implement procedures for maintaining records associated with active COVID-19 surveillance. These records include:
    - Surveillance log for acute respiratory illness (ARI), influenza-like illness (ILI), pneumonia, positive antigen test results, and positive nucleic acid amplification test (NAAT) results
    - Medical documentation of prior positive SARS-CoV-2 viral test results for crew
        - CDC has published specific testing recommendations for people who recently tested positive and recovered from COVID-19
        - Records should be available to review the ship's tracking of the 90-day timeframe for crew who have tested positive prior to resuming routine screening testing of these crew
    - Records relating to the isolation of persons positive for SARS-CoV-2. These include dates of isolation, originally assigned cabin numbers, cabin numbers for isolation, medical records, and sign and symptom logs
    - Records relating to the contact tracing of any identified close contacts
- All medical records should be maintained for at least 90 days and made available to CDC upon request for review

Testing and Reporting Reminders

- The SARS-CoV-2 virus has developed mutations with the potential to negatively impact the performance of tests for its detection.
    - FDA webpage provides information regarding the potential impact of viral mutations on COVID-19 tests.
- Self-collection of the sample should only be permitted with the following stipulations:
    - Self-collection should be permitted in the Instructions for Use (IFU).
    - The specimen should be collected under the observation of trained staff.
    - Trained staff should only observe the collection of a single individual at a time.
- Retesting of asymptomatic travelers who test positive for SARS-CoV-2 is generally not recommended (e.g., as part of a contact investigation) until 30 days post lab-confirmed diagnosis, unless they are symptomatic. Antigen testing is recommended in this situation, following FDA guidance .
    - Symptomatic passengers should be isolated and re-evaluated, including retesting for SARS-CoV-2.
    - If the cruise ship operator chooses to test for other infectious etiologies and an alternate etiology (e.g., influenza, respiratory syncytial virus [RSV], *Legionella*, Streptococcal pharyngitis) is identified through laboratory testing, routine infection control precautions recommended for the diagnosis should be followed.
- For the purposes of EDC reporting, CDC considers all positive viral test results as new cases, unless laboratory documentation of a previous SARS-CoV-2 by viral test result within the previous 30 days is provided AND the individual is asymptomatic. Cruise ship operators should have a protocol for evaluating documentation of recovery from COVID-19, [3] including reviewing previous laboratory results.
    - Onboard NAAT-positive results should not be repeated for the purpose of confirming the positive result, and the original positive result should be reported. Repeat NAAT with negative results do not negate a positive NAAT result.

[3] Documentation of recovery from COVID-19 includes the following:

- Paper or electronic copies of their previous positive viral test result (dated no less than 10 days and no more than 30 days before date of embarkation)
    - A positive test result dated less than 10 days before embarkation *may* be acceptable if accompanied by a signed letter from a licensed healthcare provider indicating symptom onset more than 10 days before the voyage

Procedures for Embarking Passengers

Health Screening

- Cruise ship operators should screen passengers for signs or symptoms of COVID-19, known close contact exposure to a person with COVID-19 within the 10 days before embarkation, or a positive COVID-19 viral test within the 10 days before embarkation.
    - For passengers with signs or symptoms of COVID-19:
        - Consider denying boarding
        - If considering allowing boarding, the cruise ship operator should complete a viral COVID-19 test for that person before they embark
            - Symptomatic persons with a positive antigen test or NAAT should be denied boarding
            - A negative result of a NAAT is recommended before allowing boarding
            - A negative antigen test should be confirmed with NAAT before allowing boarding
        - If the cruise ship operator chooses to test for other infectious etiologies and testing identifies an alternate etiology (e.g., influenza, respiratory syncytial virus (RSV), *Legionella*, Streptococcal pharyngitis) is identified through laboratory testing, routine infection control precautions recommended for the diagnosis should be followed.
    - For passengers who have a known close contact exposure within the 10 days before embarkation:
        - Considerations for allowing boarding can include:
            - Up to date with their COVID-19 vaccines, asymptomatic, and a negative result of a COVID-19 viral test conducted on the day of boarding
            - Documentation of recovery [3] from COVID-19 and asymptomatic
        - The above groups are less likely to have severe outcomes if they develop COVID-19 after boarding.
        - If allowed to board, see information below regarding recommendations for management onboard.
    - Passengers who tested positive for COVID-19 within 10 days before embarkation should be denied boarding.

Pre-Embarkation COVID-19 Testing

- To reduce likelihood of onboard transmission, pre-embarkation testing is recommended for all passengers, including those on back-to-back sailings [4]. Completion of testing closer to the time of embarkation (within 1 to 2 days) maximizes the benefit of preventing introduction of cases onboard.
    - NAAT provides greater sensitivity for detecting COVID-19 in asymptomatic persons.
    - If the cruise ship operator accepts antigen test, FDA guidance should be followed.
    - Cruise ship operators may also consider conducting embarkation testing for all or a subset of passengers.
- Recommended information requirements for pre-embarkation testing documentation:
    - Type of test (indicating it is a NAAT or antigen test)
    - Entity issuing the result (e.g., laboratory, healthcare entity, telehealth service)
    - Specimen collection date
    - Information that identifies the person (full name plus at least one other identifier such as date of birth or passport number)
    - Test result
- Cruise ship operators that choose to conduct embarkation testing should follow their shoreside response plans to ensure all travelers identified through embarkation testing as positive for SARS-CoV-2 are appropriately managed.

- Ships that allow travelers to use a self-test (sometimes referred to as home test), may consider the following criteria for accepting a self-test:
  - The test is a SARS-CoV-2 viral test (NAAT or antigen test) with an Emergency Use Authorization (EUA) or clearance from the FDA or authorization from the relevant national authority where the test is administered.
  - The testing procedure includes a telehealth service affiliated with the manufacturer of the test that provides real-time supervision remotely through an audio and video connection. Some FDA-authorized self-tests that include a telehealth service may require a prescription.
  - The telehealth provider confirms the person's identity, observes the specimen collection and testing procedures, confirms the test result, and issues a report that meets the information requirements listed below.
  - Cruise ship operators can review and confirm the person's identity and the test result details.

[4] Back-to-back sailing refers to passengers who stay on board for two or more voyages.

Procedures for Symptomatic Travelers (Crew and Passengers) and Close Contacts

Onboard COVID-19 Testing and Management of Close Contacts

Symptomatic Travelers: Identifying and isolating travelers with possible symptoms of COVID-19 as soon as possible is essential to minimize transmission of the virus. All travelers on board the cruise ship with signs and symptoms of COVID-19 (even if mild), regardless of vaccination status, should be isolated and tested for SARS-CoV-2 infection immediately upon notifying medical staff of symptom onset. Results should be reported to CDC in aggregate through the EDC form.

Close Contacts: Because of the potential for asymptomatic and pre-symptomatic transmission in this high-risk residential congregate setting, it is important that close contacts of individuals with SARS-CoV-2 infection be quickly identified and managed.

Recommended management of identified close contacts on cruise ships includes:

- Testing with viral tests for SARS-CoV-2 infection at least 5 full days after the last exposure (i.e., day 6) [5]. If antigen tests are used, cruise ship operators should follow FDA guidance .
  - 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 a nucleic acid amplification test (NAAT) is recommended. This is because some people may remain NAAT positive but not be infectious during this period.
- Symptom monitoring with immediate isolation and testing if symptoms develop
- Requiring traveler to properly wear a high-quality mask or respirator for the full 10-day period after their last exposure^

[5] Additional testing prior to day 6 can identify new cases earlier. Cruise ship operators may consider this strategy in situations where exposures may have occurred in crowded settings or if there is difficulty identifying index cases, as often occurs in the cruise ship environment.

Onboard COVID-19 Testing for Symptomatic Travelers (Crew and Passengers) and Management of Close Contacts†

Testing of Travelers with Signs and Symptoms of COVID-19	Viral (NAAT or antigen) Negative antigen test should be confirmed with NAAT (preferred), or with a second antigen test administered at least 48 hours after the first one according to FDA guidance . If the two-antigen-test option is used, then the traveler should stay in isolation until the second test is completed and is negative.

Management of Asymptomatic Close Contacts without Documentation of Recovery in Past 90 Days	Testing: Viral (NAAT or antigen, NAAT preferred) NAAT: on day 6 after last exposure. [§] Antigen (self-test or point-of-care): on day 6 after last exposure and if negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test. Masking: for 10 days after their last exposure. [§^]
Management of Asymptomatic Close Contacts with Documentation of Recovery in Past 30 Days	Testing: Not Applicable Masking: for 10 days after their last exposure. [§^]
Management of Asymptomatic or Symptomatic Close Contacts with Documentation of Recovery in Past 31-90 Days	Testing: Antigen (self-test or point-of-care): on day 6 after last exposure and if negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test.[§] Masking: for 10 days after their last exposure. [§^]

† If a cruise ship cannot maintain minimum safe manning because crew members are in isolation, the cruise ship **may** consider a "working isolation" of asymptomatic crew (i.e., crew perform job duties then return to cabin isolation) for essential crew who are asymptomatic to ensure the safety of ship as it immediately returns to port.

§ The day of last exposure to a case is counted as day 0. Additional testing prior to day 6 can identify new cases earlier. Cruise ship operators may consider this strategy in situations where exposures may have occurred in crowded settings or if there is difficulty identifying index cases, as often occurs in the cruise ship environment.

^ Individual should properly wear a high-quality mask or respirator at all times when outside of cabin indoors until 10 days after the last close contact with someone with COVID-19 (the date of last exposure to a case is considered day 0). During this time, these individuals should have in-cabin dining and also wear a high-quality mask or respirator inside their cabin if any other person (such as a crew member) enters the cabin.

- If the cruise ship operator chooses to test for other infectious etiologies and an alternate etiology is identified (through either laboratory testing or clinical diagnosis), routine infection control precautions (e.g., isolation) recommended for the diagnosis should be followed.
    - For example, if symptomatic person has only vomiting and diarrhea and tests negative for COVID-19, then acute gastroenteritis (AGE) protocols should be followed.

Cruise ship medical personnel and cruise line telemedicine providers should reference CDC's COVID-19 Information for Healthcare Professionals webpage for the latest information on infection control, clinical management, collecting clinical specimens, evaluating patients who may be sick with or who have been exposed to COVID-19, or identifying close contacts.

Considerations for Isolation

Regardless of vaccination status, travelers with COVID-19 should isolate from others. Travelers should also isolate if they have COVID-19 symptoms but do not yet have their COVID-19 test results.

Cruise ship operators should consider the following elements when isolating cases:

- Isolating travelers in single-occupancy cabins, with private bathrooms, with the door closed.
- Designating isolation cabins in areas separate from other cabins.
    - If a traveler identified as a case or a close contact is disembarking the ship within 36 hours, it may be more practical for the cruise ship operator to keep the traveler in their original cabin if the traveler will be the only person in that cabin.
- Ensuring isolated travelers (except if the traveler is a child or other dependent person who needs a caregiver) do not have direct contact with other travelers except for designated medical staff.
    - Travelers with confirmed COVID-19 may share a cabin.
- Ensuring designated medical staff or other personnel wear proper personal protective equipment (PPE) per CDC guidance when in proximity to isolated travelers.
- Delivering meals to individual cabins with no face-to-face interaction during this service.

- Ensuring cabins housing isolated travelers are not cleaned by crew members. Supplies such as paper towels, cleaners, disinfectants, and extra linens should be provided to isolated persons so they can clean their cabin by themselves as necessary.
    - Food waste and other trash should be collected and bagged by the isolated traveler and placed outside the cabin during designated times for transport to the waste management center for incineration or offloading.
    - Soiled linens and towels should be bagged in a manner that limits exposure to crew members (e.g., water-soluble bags, biohazard double-bags) by the isolated traveler and placed outside the cabin during designated times for transport to the laundry room.
- Using surveillance cameras or security personnel to ensure compliance with isolation protocols wherever possible.
- Potential criteria when selecting cabins for isolation:
    - Proximity to the medical facility and gangways for ease of patient transport
    - Location in dead-end corridors or low-traffic areas to minimize potential exposures
    - Spacing between other occupied cabins to reduce transmission risk
    - Absence of interconnecting doors to reduce accidental exposures
    - Positioning within view of security cameras for enforcement of isolation
    - Presence of balconies for psychological morale

For non-passenger carrying vessels: Click here to return to guidance.

Discontinuation of Isolation for Travelers (Crew and Passengers)

To calculate the traveler's isolation period, day 0 is their first day of symptoms or the specimen collection date of their positive viral test if asymptomatic.

CDC has provided guidance for isolation in community and high-risk congregate settings.

Although a minimum of 5 days of isolation is recommended for most people with COVID-19 in *community* settings, cruise ships should consider 10 days of isolation due to their congregate nature and potential for limited access to higher levels of medical care.[6]

Isolation may be ended after the time designated by the cruise ship operator if:

- They are fever-free for 24 hours without the use of fever-reducing medication, and
- Their other symptoms have improved

If isolation is ended after 5 days but before 10 days are completed, CDC highly recommends that cruise ship operators require these travelers to properly wear a high-quality mask or respirator while indoors on board when outside of their cabin through day 10. [7] During this time, these individuals should have in-cabin dining and also wear a high-quality mask or respirator inside their cabin if any other person (such as a crew member) enters the cabin.

[6] Isolation through day 10 is recommended for people with moderate illness (shortness of breath or difficulty breathing) or severe illness (hospitalized) due to COVID-19, or who have a weakened immune system.

[7] CDC's community guidance recommends mask-wearing through day 10. Although CDC's guidance for community settings offers an option for use of antigen tests to remove masks earlier than 10 days, this option is not recommended for cruise ship settings because of their congregate nature, potential for limited access to higher levels of medical care, and inability to avoid contact with people at higher risk of severe illness.

Onboard Medical Centers

Medical centers on cruise ships can vary widely depending on ship size, itinerary, length of cruise, and passenger demographics.

- Cruise ship medical centers are recommended to follow the operational guidelines published by the American College of Emergency Physicians (ACEP).

- To reduce the spread and severity of SARS-CoV-2, cruise ship medical centers should:
  - Carry a sufficient quantity of PPE, medical, and laboratory supplies.
  - Maintain adequate supplies of antipyretics (e.g., acetaminophen and ibuprofen), antivirals and other therapeutics for COVID-19 (if commercially available), other antimicrobial medications, oral and intravenous steroids, and supplemental oxygen.
  - Adhere to standard and transmission-based precautions when healthcare personnel are caring for patients with suspected or confirmed SARS-CoV-2 infection. Recommended PPE is described in the Infection Control Guidance.
  - Stay up to date on COVID-19 training and Clinical Care Considerations.

Laboratory Procedures

To ensure safe and effective laboratory procedures, cruise ship operators should:

- Ensure that an onboard testing instrument is properly installed and that the correct assay is being used.
- Designate a laboratory point of contact (POC) responsible for managing quality assurance and quality control and decision-making.
- Follow Interim Guidelines for Collecting and Handling of Clinical Specimens for COVID-19 Testing.
- Ensure test results are traceable from specimen collection through reporting to the individual, including all supporting materials, records, and equipment.
- Follow assay storage and handling guidance found in the assay's FDA Emergency Use Authorization (EUA) Instructions for Use (IFU) document or equivalent for those authorized in other national jurisdictions, or manufacturer's instructions for FDA-cleared assays.
- Develop and maintain a testing manual to be followed on each applicable ship for the testing instrument and assay. The testing manual should be made available to CDC inspectors upon request for review.
  - The testing manual should include the following content:
    - CDC's Nasopharyngeal Specimen Collection Infographic [PDF – 2 pages]
    - Specimen collection, storage, and handling procedures, including documentation and labeling of specimens
    - IFU for the onboard testing instrument
    - Reporting procedures for results, including how results are reported and who receives test results
    - Equipment manual provided by the manufacturer
    - Procedure for daily documentation of testing location and reagent storage area temperatures
  - Maintain the following records as part of the testing manual or in a separate document accessible to CDC inspectors:
    - Personnel training records for specimen collection, labeling, storage, testing, and reporting
    - Documentation that all onboard medical personnel involved with specimen collection and laboratory testing have completed "Ready? Set? Test! Checklist [PDF – 4 pages]" (regulatory sections do not apply)
    - Documentation that all onboard medical personnel involved with specimen collection and laboratory testing have completed competency testing [PDF – 11 pages]
    - Documentation that all onboard medical personnel have read and reviewed:
      - Good Laboratory Practices for Waived Testing Sites: Survey Findings from Testing Sites Holding a Certificate of Waiver Under the Clinical Laboratory Improvement Amendments of 1988 and Recommendations for Promoting Quality Testing
      - "To Test or Not to Test? Considerations for Waived Testing" [PDF – 60 pages]
      - "Ready? Set? Test! Patient Testing Is Important. Get the right results." [PDF – 56 pages]
    - Preventive equipment maintenance records as specified by the manufacturer and quality assurance as described in the "Ready? Set? Test! Checklist [PDF – 4 pages]"
    - Daily documentation of the testing and reagent storage area temperatures
    - Supplies/reagent inventory records (e.g., list of kits, reagents, supplies with lot numbers, expiration dates, storage conditions and other relevant information found in the IFU)
    - Documentation of corrective action if any quality assurance failures occur
    - Documentation of testing, including equipment logs, maintenance records, quality control documents, and test results

    - Display instructions, infographics, and similar material in close vicinity to where the CDC-approved onboard testing instrument is used and in clear view of the medical personnel using the instrument. The following posters should be displayed near the onboard testing instrument:
        - Specimen collection instructions [PDF – 2 pages]
        - "Ready? Set? Test!" Poster [PDF – 1 page]

Laboratory Equipment

- Ships should maintain onboard capacity to conduct viral tests for SARS-CoV-2, including nucleic acid amplification tests (NAAT) and antigen tests. CDC has published an overview of testing for SARS-CoV-2 that provide considerations for testing in different scenarios.
    - Examples of NAATs include but are not restricted to reverse transcription polymerase chain reaction (RT-PCR), reverse transcription loop-mediated isothermal amplification (RT-LAMP), transcription-mediated amplification (TMA), nicking enzyme amplification reaction (NEAR), helicase-dependent amplification (HDA).
    - All test systems should:
        - Be cleared or authorized for emergency use by the U.S. Food and Drug Administration (FDA), or the relevant national authority where the test is administered;
        - Allow for specimen-to-instrument transfer in a way that minimizes the risk of contamination.
    - NAAT systems should be evaluated using the FDA reference panel for SARS-CoV-2 and possess a limit of detection (LoD) value ≤18,000 NDU/ml. For tests that do not have the FDA reference panel available, tests using sensitivity data ≥ 95% from clinical samples as indicated in the manufacturer's IFU are recommended.
    - For antigen testing, cruise ship operators should follow CDC's Guidance for Antigen Testing for SARS-CoV-2 for Healthcare Providers Testing Individuals in the Community.
    - To reduce the risk of false negative test results with self and point-of-care antigen tests, cruise ship operators should consult FDA's webpage .
- Clarification regarding "CLIA-waived testing" when procuring NAAT systems:
    - All facilities in the United States that perform laboratory testing on human specimens for health assessment or the diagnosis, prevention, or treatment of disease are regulated by the Centers for Medicare and Medicaid Services (CMS) under the Clinical Laboratory Improvement Amendments of 1988 (CLIA).
    - Waived COVID-19 diagnostic test systems include those cleared or with an EUA by FDA for point-of-care use (e.g., outpatient medical facilities or mobile clinics) and those tests categorized by FDA as waived after FDA approval or clearance (though no COVID-19 tests have been cleared or approved yet). Laboratories that perform only waived tests should obtain and maintain, at minimum, a Certificate of Waiver.
    - CLIA allows for a primary site (e.g., a shoreside corporate office) to have a CLIA Certificate of Waiver and perform testing at temporary sites (e.g., cruise ship medical centers).
    - To the extent that CLIA might apply to a foreign-flagged cruise ship operating or intending to operate in U.S. waters, CMS is temporarily exercising enforcement discretion under CLIA for SARS-CoV-2 testing. Specifically, neither CMS nor the state survey agencies on its behalf will require such foreign-flagged cruise ships to obtain a Certificate of Waiver to perform such testing.

Disembarking Travelers (Crew and Passengers)

If a traveler is known to be infected with or has symptoms compatible with COVID-19:

- All escorting personnel should wear appropriate proper PPE per CDC guidance.
- The cruise ship operator should ensure a separate pathway or sanitary corridor where the disembarking traveler will exit with their personal belongings such as luggage.
- The pathway used for disembarkation, any potentially contaminated surfaces (e.g., handrails) along the pathway, and any equipment used (e.g., wheelchairs) should be cleaned and disinfected immediately after disembarkation (see Cleaning and Disinfection section below).

Disembarkation to Obtain Medical Care

Cruise ship operators should have clear protocols that avoid medical evacuations at sea to the extent possible for COVID-19 and other medical conditions. Protocols should rely on commercial resources (e.g., ship tender, chartered standby vessel, chartered airlift) for unavoidable medical evacuations at sea and be designed to minimize the burden on federal (including U.S. Coast Guard), state, and local government resources. Travelers with COVID-19 should properly wear a high-quality mask or respirator, covering their mouth and nose during the disembarkation process and throughout transportation to the shoreside healthcare facility, if a mask can be tolerated and does not interfere with medical treatment (e.g., supplemental oxygen administered via an oxygen mask).

Other Travelers with COVID-19 and Close Contacts

- Travelers who are symptomatic, have confirmed COVID-19, or have been exposed to a person with COVID-19 should follow CDC guidance for when they can travel after disembarkation.
- Shoreside housing should be offered to travelers who are recommended to not travel and who cannot get home by noncommercial means (e.g., private vehicle).

COVID-19 Screening Testing of Crew

Screening Testing of Newly Embarking Crew

- Cruise ship operators should test newly embarking crew on the day of embarkation and may consider follow up testing after embarkation. If using antigen tests, follow FDA guidance .
  - If the crew member's results are positive, they should be isolated until criteria are met for discontinuation of isolation according to the *Discontinuation of Isolation for Travelers (Crew and Passengers)* section above.
- Medical personnel should document all positive SARS-CoV-2 test results (pre-embarkation, throughout crew member's contract duration, and post-disembarkation) in the ship's medical records. These medical records should be made available for CDC inspection upon request.
- Cruise ship operators should report results in aggregate to CDC daily through the EDC form.

Routine COVID-19 Screening Testing and Monitoring of All Crew

Screening testing is defined as testing of asymptomatic crew who have not been identified as a close contact to a person with confirmed COVID-19 or a COVID-19-like illness.

- Screening testing of crew may be useful to identify asymptomatic infections. If implementing a screening testing program, testing decisions should not be based on the vaccination status of the individual being screened.
- The cruise ship operator may consider increased frequency of routine screening testing of medical center personnel and any crew in passenger-facing positions (i.e., front-facing crew).
- Cruise ship operators should consider serial viral (antigen or NAAT) screening testing of crew every 3 days for ships when the 7-day traveler (crew or passenger) attack rate reaches 1%; serial viral screening testing is recommended when the 7-day traveler (crew or passenger) attack rate reaches 2%. See section below on calculating the *7-day Crew or Passenger Attack Rates*.

Preventive Measures

Strict adherence to passenger and crew testing protocols will aid in mitigating transmission and maintaining high vaccination levels will reduce the likelihood of severe illness onboard; however, continued prevention efforts are necessary to reduce the possibility of transmission to others if a case occurs on board the ship.

Strategies for Everyday Operations (General Preventive Measures)

Note: General preventive measures are for *all* maritime vessels (i.e., for cruise ships and non-passenger carrying vessels).

- Inform travelers of any mandatory specific public health measures prior to boarding.
- Ensure crew remain up to date with their vaccines, which includes additional doses for individuals who are immunocompromised or booster doses at the appropriate times.

- Cruise ship operators should ensure that high-quality masks or respirators are available to passengers aged 2 years or older for use in indoor settings, especially when crowded.
- Consider instructing crew members to properly wear a high-quality mask or respirator in indoor areas outside of individual cabins.
- Consider strategies to improve ventilation of indoor areas and maximize use of outdoor spaces.
- Increase space and distance or avoid crowding of crew members when working or moving through the ship. Note: Advise crew that if distance cannot be maintained in narrow corridors, then they should allow persons to pass completely before entering.
- Reduce face-to-face interactions between crew and passengers to the extent practicable.
- Consider strategies to reduce crowding in all venues and where travelers wait in line.
- Modify meal service to avoid crowding (e.g., reconfigure dining room seating, stagger mealtimes, encourage in-cabin or outdoor dining).
- Inform travelers that use of cigarettes, e-cigarettes, pipes, or smokeless tobacco can lead to increased contact between potentially contaminated hands and their mouths.
- Make hand sanitizer (containing at least 60% alcohol) available to passengers, crew, and port personnel throughout the ship and terminal.
- Cruise ships should consider the use of wearable proximity alerting technology, such as proximity bands, to aid in contact tracing.

For non-passenger carrying vessels: Click here to return to guidance.

All Onboard and Terminal (Embarkation/Disembarkation) Locations

- Take steps to prevent crowding throughout the ship. This can include staggering of schedules, modifying layouts or seating arrangements, and limiting capacity.
- Improve ventilation.
- Provide touchless options, when possible.
- Follow CDC's recommendations for wearing masks in travel and public transportation settings

Embarkation/Disembarkation Procedures

- Ensure written notifications about COVID-19 prevention and control are presented before passengers reach the check-in/check-out point to give them enough time to review before check-in/check-out.
- Ensure embarkation and disembarkation procedures follow the processes outlined in the shoreside emergency response plan.
- Ensure there is a private screening area for people identified as needing additional medical screening during the embarkation and check-in process.

Dining

- Discourage crowded waiting areas by using phone app or text technology to alert patrons when their table is ready. Avoid using "buzzers" or other shared objects.
- Food and beverage stations
  - Use physical guides such as stanchions to direct flow and prevent crowding around beverage station machines and counters.
  - Provide hand sanitizer (containing at least 60% alcohol) at the entrances to food and beverage stations.
- Provide and encourage outdoor dining and bar/beverage service options.
- Provide and encourage in-room passenger dining service.
- Ensure adequate supplies to minimize sharing of high-touch materials (e.g., serving spoons) to the extent practicable; otherwise, limit use of supplies and equipment by one group of food workers at a time and clean and disinfect between use.
- Consider options for consumers to order ahead of time to limit the amount of time spent in the restaurant.

- Provide alternative meal services options, such as prepackaged grab-and-go meals, for consumption on open decks or in individual cabins to minimize risks associated with congregate indoor dining.

Public Toilet Rooms

- Ensure handwashing facilities are well-stocked with soap and a method to dry hands, such as paper towels or air dryers, in accordance with the 2018 VSP Operations Manual [PDF – 291 pages].

Signs and Messages

- Post signs, in highly visible locations (such as at entrances and in toilet rooms), to promote steps that prevent the spread of the virus (such as avoiding crowded areas, washing hands with soap and water frequently, using appropriate cough etiquette, and properly wearing a high-quality mask or respirator).

Shore Excursions & Transportation Services

- Ensure all shore excursion tour companies adhere to cleaning and disinfection and other COVID-19 public health measures throughout the tour.
- Develop and maintain a protocol for managing persons with COVID-19 who are recommended to isolate and who need to disembark at a foreign port of call. At a minimum, the protocol should include the following:
  - Notification of local authorities
  - Plans for disembarking and housing persons with suspected or confirmed COVID-19 needing shore-based hospital care and their travel companion(s) for the duration of their isolation period.
  - Commercial repatriation of U.S.-based persons with COVID-19 and close contacts should follow CDC guidance. For commercial repatriation of foreign-based persons with COVID-19 or close contacts, cruise ship operators should consult with all relevant public health authorities.

Enhanced Strategies (Additional Preventive Measures)

Attack rates are useful for guiding implementation of additional preventive measures.

How to Calculate 7-Day Crew or Passenger Attack Rates

Crew: 7-day crew attack rates are calculated using the cumulative number of crew cases in the last 7 days divided by the average number of crew onboard the ship in the last 7 days.

Passenger: 7-day passenger attack rates are calculated using the cumulative number of passenger cases in the last 7 days divided by the average number of passengers onboard the ship in the last 7 days.

The following persons should not be included in these calculations because they do not pose a risk of transmission onboard the ship:

1. Passengers who test positive on day of embarkation who do not board the ship, or
2. Newly embarking crew members who test positive during any quarantine implemented at the ship's discretion.

Disclaimer: The accuracy of attack rates is dependent upon the frequency of routine screening testing of asymptomatic travelers on board.

Recommendations when 7-day crew or passenger attack rate reaches 1%

- Minimize the number of crew sharing a cabin or bathroom to the extent practicable.
- Instruct crew members to remain in cabins as much as possible during non-working hours.
- Consider serial viral (antigen or NAAT) screening testing of crew every 3 days. The onboarding of additional laboratorians may be needed to facilitate the testing process.
- Cancel all face-to-face employee meetings, group events (such as employee trainings), or social gatherings.
- Close all crew bars, gyms, and other group settings.

- Expedite contact tracing (including the use of wearable technology, recall surveys, and the onboarding of additional public health staff).
- Close crew indoor smoking areas.
- Provide all crew members with high-quality masks or respirators, such as KN95s.

Recommendations when 7-day crew or passenger attack rate reaches 2%

- Require mask use by passengers when indoors, regardless of vaccination status.
- Provide all passengers with high-quality masks or respirators, such as KN95s, and
  - Provide passengers and crew with information on how to properly wear, take off, and clean (if reusable) masks.
  - Remind passengers and crew not to touch their masks when wearing them.
  - Position posters educating passengers on how to properly wear high-quality masks or respirators in high traffic areas throughout the ship.
- Conduct serial viral (antigen or NAAT) screening testing of crew every 3 days. The onboarding of additional laboratorians may be needed to facilitate the testing process.
- Implement a "working quarantine" for all crew (i.e., crew perform job duties then return to cabin) policy.
- To the extent possible, reduce the dining cohort size for crew, and shorten dining times to avoid crowding.
- Maximize the introduction of outdoor air and adjust HVAC systems to increase total airflow to occupied spaces.
- Maximize air circulation in crew outdoor smoking areas.
- Eliminate self-serve dining options at all crew and officer messes.
- Cancel crew shore leave.
- Test all passengers prior to the end of the voyage, regardless of their vaccination status.
- Send written notification to passengers on the current, previous, and subsequent voyages informing them of the COVID-19 conditions and measures being taken to reduce transmission on board.

Considerations for Suspending Operations

In some circumstances, additional public health precautions, such as returning to port immediately or delaying the next voyage, should be taken to help ensure the health and safety of onboard travelers or newly arriving travelers.

A ship should consider suspending operations based on the following factors:

- Sustained transmission of SARS-CoV-2, defined as a 7-day:
  - Crew attack rate greater than or equal to 10% occurring at least once weekly over 3 consecutive weeks;
  - Passenger attack rate greater than or equal to 10% occurring at least once weekly over 3 consecutive weeks;
  - Crew attack rate greater than or equal to 20% occurring on any single day;
  - Passenger attack rate greater than or equal to 20% occurring on any single day; or
  - Traveler (crew AND passenger) attack rate greater than or equal to 30% occurring on any single day[8].
- Severe COVID-19 among passengers or crew resulting in:
  - Shortages of supplemental oxygen or other medical supplies related to COVID-19 treatment, or
  - 2 or more deaths in passengers and/or crew in a 7-day period.
- Potential for COVID-19 cases to overwhelm on board medical center and/or public health resources, defined as the inability to maintain:
  - Adequate staff to
    - Evaluate symptomatic travelers and their close contacts,
    - Conduct diagnostic and screening testing of travelers,
    - Conduct routine medical checks of travelers in isolation, or
    - Conduct contact tracing of close contacts.
  - Adequate supplies of
    - PPE listed in the Supplies section below,
    - Testing equipment for routine and diagnostic screening,

- Antipyretics (fever-reducing medications such as acetaminophen and ibuprofen),
- Antivirals and other therapeutics for COVID-19, if commercially available,
- Oral and intravenous steroids, or
- Supplemental oxygen.

- Inadequate onboard capacity to fulfill minimum safe manning or minimal operational services, including but not limited to housekeeping and food and beverage services.
- A variant of concern or a new or emerging variant with potential for increased severity or transmissibility identified among cases on board.

[8] These thresholds are subject to change based on the characteristics of the dominant COVID-19 variant in the U.S.

Frequently Asked Questions

The following frequently asked questions (FAQs) for cruise ship operators and medical center personnel provide more detail about CDC recommendations for cruise ships.

Previously under CDC's COVID-19 Program for Cruise Ships, there was a threshold for vaccines among passengers and crew. Does CDC have a threshold that they recommend under this guidance?

CDC recommends all *travelers* be up to date with their COVID-19 vaccines. A threshold cruise ship operators can consider is operating with least 90% passengers and 95% crew who are up to date with their COVID-19 vaccines. While the protection COVID-19 vaccines provide to individual travelers in preventing severe illness or death from COVID-19, having a high proportion of travelers on board who are up to date with COVID-19 vaccines reduces the likelihood that cruise ships' medical centers are overwhelmed by cases of COVID-19.

Non-Passenger-Carrying Vessel Guidance

Planning and Prevention

Plans to Mitigate COVID-19 On Board

Ship companies should develop, implement, and operationalize an appropriate, actionable, and robust plan to prevent, mitigate, and respond to the spread of COVID-19 on board ships. The Occupational Safety and Health Administration's webpage, Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace , provides ways to prevent workplace exposures to persons with COVID-19. Plans should include the following components:

- Options to keep crew up to date on their COVID-19 vaccines, which includes booster doses. This includes working with local authorities to make arrangements for crew to get vaccinated while the ship is at port. Ship operators should keep records of the vaccination status of all crew.

- Training of all crew on COVID-19 prevention and mitigation
- On-board monitoring of crew and non-crew for signs and symptoms of COVID-19
- COVID-19 testing (onboard or onshore)
- On-board isolation and "working" quarantine
- Adequate medical staffing (this can include telehealth or telemedicine providers)
- Maintaining sufficient quantities of Personal Protective Equipment (PPE), oxygen, and other supplies, and the ability to obtain additional resources, if needed
- COVID-19 outbreak management and response information
- Medical arrangements for onshore evaluation and hospitalization
- Screening of embarking or disembarking crew and non-crew
- A system to notify respective national, state, and local public health authorities

Preventive Measures for Ship Operators

Shipping involves the movement of people from different geographic areas in settings with inevitable close contact. Like other close-contact environments, ships may facilitate transmission of respiratory viruses from person to person through exposure to respiratory droplets or small particles that contain the virus or contact with contaminated surfaces.

Preventive measures for all maritime vessels are listed here.

COVID-19 Vaccinations

CDC recommends that people stay up to date with their COVID-19 vaccines, which includes booster doses. For more information, please see CDC's Stay Up to Date with COVID-19 Vaccines Including Boosters.

Pre-Boarding Procedures for Non-Passenger-Carrying Vessels

Before anyone boards the ship, conduct verbal or written screening in appropriate languages and in a private environment to determine whether persons have had signs or symptoms of COVID-19 or a known exposure (close contact) to a person with COVID-19 within the past 10 days.

Persons with signs or symptoms of COVID-19:

Consider denying boarding to any persons with signs or symptoms of COVID-19, regardless of vaccination status. These symptomatic persons should be assessed by medical personnel and either be determined not to have COVID-19 or complete isolation for COVID-19 shoreside before they are allowed to board.

Close Contacts:

Ship operators, at their discretion, may deny boarding to crew who were exposed to a person with COVID-19.

If boarding is allowed, CDC recommends:

- a 10-day "working" quarantine [9] period wearing a high-quality mask or respirator any time they are around others. If viral COVID-19 testing is available onboard, testing before the end of "working" quarantine (day 6 or later) is recommended.
  - If using antigen tests and the result is negative, repeat the test after 48 hours, and again 48 hours later if the second test is negative (known as serial testing).
  - Testing is not recommended for people who recovered from COVID-19 in the past 30 days unless they develop symptoms of COVID-19.

AND

- monitoring for symptoms until 10 days after their last exposure. If symptoms develop, immediate isolation and testing is recommended.

Anyone who develops symptoms of COVID-19 after an exposure should isolate until COVID-19 testing can be conducted and results are available according to the Isolation Procedures section below. A single, negative antigen test result does not rule out infection. To best detect infection in a person who has COVID-19 symptoms, a negative antigen test should be repeated at least 48 hours after the first test.

[9] For a "working" quarantine, crew are permitted to work but must observe activity restrictions while off duty. These crew must have in-cabin dining and properly wear a high-quality mask or respirator at all times when outside of their cabin indoors. They must also wear a high-quality mask or respirator inside their cabin if any other person (e.g., a crew member) enters the cabin.

How to Test for COVID-19 on Board

Please see Overview of Testing and the following infographics for additional information on COVID-19 testing for crew: COVID-19 Testing: What You Need to Know [PDF – 1 page].

Crew who use "home tests," "at-home tests," or "over-the-counter (OTC) tests", should review CDC's Self-Testing At Home or Anywhere webpage.

Isolation Procedures

Isolation Basics

Isolation is used to separate people with confirmed or suspected COVID-19 from those without COVID-19. Persons with symptoms of COVID-19, regardless of vaccination status or previous recovery from COVID-19, should be isolated using the same procedures as a person with confirmed COVID-19 until testing can be conducted and results are available. Sick persons, regardless of vaccination status or previous recovery from COVID-19, should self-isolate immediately and inform the Captain or medical designee if they develop a fever (100.4°F / 38°C or higher), begin to feel feverish, or develop acute respiratory symptoms (cough or difficulty breathing) or other symptoms of COVID-19. Please see table below for isolation options for crew on non-passenger carrying vessels ships.

The following procedures are recommended for isolation onboard a ship:

- Isolate persons in single-occupancy cabins, with private bathrooms, with the door closed, if possible. Persons should wear a high-quality mask or respirator, any time they are outside of isolation.
- Isolated persons should have no direct contact with other persons except for medical designee.
- Designated ship medical personnel or the Captain should communicate with each person in isolation at least once per day to check on their status.
- Ship medical personnel and telemedicine providers should reference CDC's COVID-19 website, Information for Healthcare Professionals, for the latest information on infection control, clinical management, collecting clinical specimens, evaluating patients who may be sick with or who have been exposed to COVID-19, and identifying close contacts.
- Additional considerations for isolation can be found here.

Isolation Discontinuation

Due to the high risk of secondary transmission onboard non-passenger carrying vessels and , the following isolation recommendations should be considered:

- Isolation may be discontinued for symptomatic crew with suspected or confirmed COVID-19 after 10 days from symptom onset, if:
  - they are fever-free for 24 hours without the use of fever-reducing medication, **and**
  - their other symptoms have improved.
- Isolation may be discontinued for asymptomatic crew with confirmed COVID-19 after 10 days from their first positive viral test.

- If a non-passenger-carrying vessel cannot maintain minimum safe manning because crew members are in isolation, crew without symptoms of COVID-19 may end isolation after 5 days, if:
  - they are fever-free for 24 hours without the use of fever-reducing medication, **and**
  - their other symptoms have improved
- These crew should have in-cabin dining and properly wear a high-quality mask or respirator at all times when outside of their cabin indoors. They should also wear a high-quality mask or respirator inside their cabin if any other person (e.g., a crew member) enters the cabin.
- If isolated off the ship (i.e., post-disembarkation) in the United States: Travelers should follow the isolation guidance for the general population. See additional information about air travel. Note: the isolation guidance for the general population does not apply to crew who are transferring to another ship or reembarking the same ship (i.e., these crew would need to isolate until 10 days after symptom onset/positive test shoreside or on the ship).

Options for Managing One or More Confirmed Cases of COVID-19

The following table provides management options for non-passenger carrying vessels and their crew after a confirmed case of COVID-19 is identified. Decisions regarding the best option for managing an individual ship and exposed crew on board should take into account various factors (e.g., the industry, seaport location, itinerary, and the availability of alternate crew).

Note: The ship should be allowed to come into port for disembarkation, disinfection, and embarkation. There is an increased safety risk, to the crew and port partners, associated with embarking or disembarking a ship while at anchorage (i.e., keeping the ship at sea).

Recommendations for Continued Operations of Non-Passenger Carrying Vessels with One or More Cases of COVID-19

	Contact Management	Case Management

Working Quarantine	• Onboard 10-day “working” quarantine [¥] of all crew without signs or symptoms (i.e., working quarantine of crew without signs or symptoms, regardless of vaccination status)
	  ◦ Increased space and distance between crew
	  ◦ Properly worn high-quality mask or respirator
	• Frequently touched surfaces (e.g., door handles, handrails, light switches, phones) in shared spaces on board are cleaned and disinfected
		• First case: isolation (ideally shoreside [†])
		• Additional symptomatic crew or confirmed cases (regardless of vaccination status) to be isolated in cabins [§]

[†] Approval for isolation facility required from local health department.

[‡] Preferable that all new crew are up to date with COVID-19 vaccines, which includes booster doses.

[¥] For a “working” quarantine, crew are permitted to work but must observe activity restrictions while off duty. These crew should have in-cabin dining and properly wear a high-quality mask or respirator at all times when outside of their cabin (indoors and outdoors). They should also wear a high-quality mask or respirator inside their cabin if any other person (e.g., a crew member) enters the cabin.

[§] If emergency medical evacuations are needed, U.S. Coast Guard (USCG) and/or Customs and Border Protection (CBP) should be notified.

Disembarkation

Disembarking Persons with Symptoms of COVID-19 and Confirmed Cases to Obtain Medical Care on Shore

Ship operators and shipping agents are responsible for the medical care of sick or infected persons on board, including those who need hospitalization. For persons who need emergency medical attention that cannot be provided on the ship, ship operators and shipping agents should coordinate with the shoreside healthcare facility, port authority, U.S. Coast Guard, and

state and local health department, if required.

- Medical transport to the shoreside medical facility must be arranged in advance in coordination with the receiving facility.
- Sick persons should wear a high-quality mask or respirator during the disembarkation process and throughout transportation to the shoreside healthcare facility, if they can tolerate a high-quality mask or respirator and does not interfere with medical treatment (e.g., supplemental oxygen administered via an oxygen mask).
- If a sick person is known to have COVID-19 or has symptoms compatible with COVID-19:
  - All escorting personnel should wear appropriate PPE.
  - The gangway should be cleared of all other personnel until the sick person has disembarked.

Disembarking All Other Persons from Ships after a Case Is Identified

- Ship operator or shipping agent should inform ship pilots and ground transportation of the situation and confirm the operators have plans in place to notify and protect the health and safety of their staff.
- Ship operator or shipping agent should provide high-quality masks or respirators to disembarking crew members or confirm that they have their own. Persons without symptoms should wear high-quality masks or respirators during disembarkation and while taking ground transportation until they reach their final destination.

Reporting

CDC requires that ships sailing from a non-U.S. port destined for a U.S. port of entry immediately report any death on board or illness that meets CDC's definition of "ill person," including confirmed or suspected cases of COVID-19, to the CDC Quarantine Station with jurisdiction for the port.

Additional information for non-cruise ships: If the person's signs and symptoms are consistent with CDC's standard required reporting requirements, please have the following information available before notifying the nearest CDC Quarantine Station:

1. List of the sick person's signs and symptoms, including onset dates.
2. If the sick traveler has been in contact with a person with COVID-19 or a sick person.
3. Has this sick traveler been vaccinated against COVID-19? If yes, please confirm vaccine type/name and dates of administration.
4. Will the sick travelers be medically disembarked? If deceased, will the body be transferred to the medical examiner?
5. Are there any other sick persons on the ship with similar symptoms? If so, have they been isolated?
6. What is the vaccination status of each traveler onboard?

Supplies

Ships should ensure availability of conveniently located dispensers of alcohol-based hand sanitizer containing at least 60% alcohol. Where sinks are available, ensure handwashing supplies (such as soap and disposable towels and waste receptacle, or air dryer) are consistently available.

Ships should carry a sufficient quantity of:

- Personal Protective Equipment (PPE), including high-quality masks or respirators, NIOSH-approved disposable N95 filtering facepiece respirators or higher, eye protection such as goggles or disposable face shields that cover the front and sides of the face, and disposable medical gloves and gowns.
  - If NIOSH-approved disposable N95 filtering facepiece respirators or higher are required, an OSHA or equivalent respiratory protection program that includes medical clearance and fit testing should be implemented.
- High-quality masks or respirators to meet day-to-day needs.
- Medical supplies to meet day-to-day needs. Have contingency plans for rapid resupply during outbreaks.
- For ships with onboard laboratory capacity: sterile viral transport media and sterile swabs to collect nasopharyngeal and nasal specimens for diagnostic testing if COVID-19 is suspected.

- Fever-reducing medications such as acetaminophen, paracetamol, or ibuprofen, routine antiviral and antimicrobial medications, and supplemental oxygen. Please note that during the COVID-19 pandemic, this may vary from what is stipulated under the Guidelines on the Medical Examinations of Seafarers [PDF – 70 pages] (Appendix H, Standard A4.1, #4).

These optimal recommendations can be modified to reflect individual ship capabilities and characteristics.

Additional Considerations

- Develop role-based policies to protect employees and provide training to all crew and cleaning staff before they begin work. Follow applicable guidance for bloodborne pathogens, PPE, and hazards associated with cleaning, disinfectiIFYUon and other chemicals used.
- Educate employees to recognize the signs and symptoms of COVID-19 and provide instructions on what to do if they develop symptoms.
- Instruct crew members and other staff who may have contact with people with symptoms of COVID-19 in the proper use, storage, and disposal of PPE. Incorrect use or handling of PPE can increase the spread of disease. All crew who are required to wear PPE as part of their job should be trained on the following topics:
  - An understanding of when to use PPE
  - What PPE is necessary and why for each role (see above for PPE recommendations)
  - How to properly don (put on), use, and doff (take off) PPE
  - How to properly dispose of PPE
- If a U.S.-based crewmember is a confirmed case, maintain the person's confidentiality as required by the Americans with Disabilities Act (ADA).

For cruise ships: Click here to return to guidance.

Cleaning and Disinfection

In addition to using routine cleaning and disinfection strategies, ships should focus on cleaning and disinfecting common areas where persons may come into contact with infectious persons. Consider frequent, routine cleaning and disinfection of commonly touched surfaces, such as handrails, and doorknobs.

Timing and location of cleaning and disinfection of surfaces

- Follow CDC's Cleaning and Disinfecting Your Facility In addition, follow the recommendations below that are specific to vessels.
- Close off areas used by sick persons after they are vacated and wait as long as practical before beginning cleaning and disinfection to minimize potential for exposure to respiratory droplets or small particles that contain the virus:
  - Use the ship's ventilation system to exhaust as much air as possible from indoor areas and, if possible, open outside windows to increase air circulation in the area.
  - If possible, wait up to 24 hours before beginning cleaning and disinfection.
- Cleaning staff should clean and disinfect all areas (e.g., cabins, bathrooms, and common areas) used or visited by the sick persons, focusing especially on frequently touched surfaces.
- To the extent possible, cabins housing sick persons should not be cleaned by other crew members.
- Supplies (e.g., paper towels, cleaners, disinfectants) can be provided to sick persons, to the extent possible, so they can clean their own cabins as necessary.
- If cleaning by another person is essential, the person should be trained to use PPE, provided with the necessary PPE, and trained on safe cleaning procedures.

Laundered Items (e.g., linens, clothing)

- Do not shake dirty laundry; this minimizes the possibility of dispersing SARS-CoV-2, the virus that causes COVID-19, through the air.
- If possible, have the sick person place laundry in a separate sealed bag for transport to the laundry facilities.
- Properly dispose of items that cannot be effectively cleaned and disinfected or laundered.

Personal Protective Equipment (PPE) and Other Protective Measures for Cleaning Staff

Cleaning staff should:

- Wait 24 hours or as long as practical before beginning cleaning and disinfection of cabins vacated by persons with confirmed COVID-19.
- Wear disposable gloves and gowns for all tasks in the cleaning process, including handling laundry and garbage.
  - If cleaning occurs soon after the departure of the person with COVID-19, consider all using respiratory protection and eye protection.
  - Gloves and gowns should be compatible with the disinfectant products being used per the manufacturers' directions.
  - Additional PPE might be required based on the cleaning/disinfectant products being used and whether there is a risk of splash.
  - Gloves and gowns should be removed carefully to avoid contamination of the wearer and the surrounding area. Be sure to perform hand hygiene after removing gloves.
- Remove and replace PPE that has been breached (e.g., tear in gloves). Report breaches in PPE or any potential exposures to the supervisor.
- Perform hand hygiene often, including immediately after removing gloves and after contact with a sick person, by washing hands with soap and water for 20 seconds. If soap and water are not readily available, use an alcohol-based hand sanitizer containing at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.

For cruise ships: Click here to return to guidance.

Resources for More Information

Stay informed. Use these sources for more information on COVID-19:

- NIOSH Workplace Safety and Health Topic website
- CDC COVID-19 website
- OSHA COVID-19 website
- World Health Organization (WHO): Operational Considerations for Managing COVID-19 Cases/Outbreak on Board Ships

Last Reviewed: April 27, 2023