

# GW MMA Coronavirus Guidance

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## Disclaimers and use of this Document – PLEASE READ THIS FIRST

This document has been put together by GW Maritime Medical Access to provide guidance on the current Coronavirus pandemic.

The information contained in this document is not designed to serve as company policy for individual clients. **We recommend that each client develop internal company policies on coronavirus management and response that best suit their individual operational needs.** This document is designed to provide background information and recommend practices to support our clients in the development of these policies. **This document does not serve as medical or legal advice, nor as a regulatory mandate or industry standard.**

We do suggest that organizations consider some of the following questions when developing policies:

- 1) How will crew be educated about the Coronavirus, and how will crew be made aware of these policies?
- 2) How will crew be screened for Coronavirus prior to embarking on a vessel?
- 3) How will operations aboard be altered to minimize the risks from Coronavirus?
- 4) How will operations in port be altered to minimize the chance that Coronavirus may penetrate the vessel?
- 5) How will ill crew members be isolated and managed aboard the vessel?
- 6) How will operations be managed if a vessel diversion or crew-member evacuation becomes necessary?
- 7) What additional or extra equipment should be carried on the vessel during the coronavirus pandemic?

The Coronavirus pandemic is a dynamic and constantly changing situation and as such, guidance on the topics discussed in this document may change over time. This document will be periodically updated to reflect this. **When using this document, please check to ensure that you have the most up to date version.**

The guidance in this document is based on a variety of sources, including review of medical literature and current CDC recommendations. Where possible, links to additional information published by the CDC are included. Linking to this material will help to ensure that the most up to date recommendations are available.

As always, please contact GW MMA at 001-202-715-4219 if assistance is needed or a crew member becomes ill.

## General Information

### Background

The recent novel Corona Virus (SARS-CoV-2) appears to have started infecting people in and around the city of Wuhan China in late 2019. It is presumed that the infection spread out of the area where it started through infected travelers. Patients with the disease have been identified throughout the world, and the infection was declared a pandemic by the World Health Organization on March 11<sup>th</sup>, 2020. The pandemic is being closely monitored by national and international health agencies such as the WHO and the U.S. Centers for disease control (CDC). As these organizations gain more understanding about the nature of the disease; how it is transmitted; how to diagnose cases and how to best prevent spread of illness, they provide updated guidance on these matters. ***In short, the development of the SARS-CoV-2 pandemic is highly dynamic, and recommendations on management periodically change.***

There are many types of Coronaviruses that infect humans and other animals. Sometimes Coronaviruses that prefer non-human hosts begin to cause disease in people. They are referred to as “new” or “novel” Coronaviruses and can cause more serious, and even fatal infections in people. Therefore, when a novel Coronavirus is identified, and it is shown to be passing on from person to person, this is regarded as a potential public health emergency. To date, there have been 3 major outbreaks associated with novel Coronaviruses: SARS-CoV in 2003, MERS-CoV in 2012, and very recently the ongoing pandemic, SARS-CoV-2, which causes the disease called COVID 19. SARS-CoV-2 is unique from other recent novel coronaviruses in several ways that have allowed it to spread world-wide, while the other recent coronaviruses had only limited spread.

### Transmission

Coronaviruses are usually spread from infected to non-infected persons through respiratory droplets which come from a person’s oral and nasal secretions. When a patient coughs or sneezes, these droplets can become airborne. A person can easily deposit secretions on their hands and transmit them to any surface that they touch (such as a door handle or a faucet). When a noninfected person comes into contact with an infected droplet, they are risk for contracting the disease.

The virus can be contracted when an infected droplet comes in contact with a persons mucous membranes, such as when it is inhaled or gets into the eye.

One aspect of the current Coronavirus that appears to be unique is that infected persons can pass the virus on to others before showing any symptoms. Some individuals may become infected and recover without ever showing symptoms. Consequently, the virus can spread from one person to another without the first person even being aware that they have, or are spreading, the virus.

Transmission is more likely when an infected individual has prolonged or continuous contact with others.

### Symptoms

Almost all of the Coronaviruses that infect people cause a common cold: runny nose, slight fever, mild cough and some aches and fatigue. Most individuals who are infected with the SARS-CoV-2 virus will develop some of these symptoms.

Symptoms that may indicate infection with SARS-CoV-2 include:

- 1) Cough
- 2) Shortness of breath or difficulty breathing
- 3) Fever (temperature over 100.4° Fahrenheit or 38° Celsius)
- 4) Chills
- 5) Headache
- 6) Sore Throat
- 7) Rigors (Repeated Shaking Chills)
- 8) Muscle Aches
- 9) New loss of taste or smell
- 10) Vomiting or Diarrhea

A small percent of those infected with SARS-CoV-2 will go on to develop severe symptoms and have difficulty breathing that is severe enough to require a breathing tube and ventilator (machine to assist breathing). People with pre-existing medical conditions, such as diabetes, high blood pressure, and obesity are at greater risk for having more severe COVID-19 disease.

### Treatment

Although there are several medications and other treatments that are in trials and being tested for use in treating COVID-19, there are not yet any specific treatments that are approved. Treatment is therefore *supportive*, which means that health care workers (HCW) treat a patient's symptoms.

**Therefore, the most important measures that we can take as citizens and HCWs is to follow the guidance of agencies such as the CDC and WHO. Currently, it is important that we are vigilant about identifying and isolating potential cases AND that we follow advisories on how to avoid contracting and transmitting the virus.**

### Testing

GW Maritime Medical Access has put together the following guidance for crews to understand the different types of tests available for COVID-19.

## Some Important Notes on Testing

A basic idea that is true of ALL medical testing (lab tests, EKGs, x-rays, etc.) is that no test is perfect and no test will give the correct answer 100% of the time. Consider a strep test: if your doctor only swabs one side of your throat for a fraction of a second, there might not be enough strep on the q-tip to detect, even if you do have strep throat. Furthermore, tests have different abilities to see disease. That's why a small fracture in a bone might not show up on an x-ray but will show up on a CT scan. This is true of blood tests as well.

For established diseases such as the flu, a doctor will know how accurate a test is and will know the expected course of the disease, and consequently would be able to select the right flu test and would be able to give an assessment of risk based on the result.

Since the virus that causes COVID-19 is extremely new, and all the tests that look for it are new, the expected course of the disease is not clearly known and the accuracy of the tests is still evolving. Information about the accuracy of the test should be provided by the individual manufacturer, however at this time the accuracy of each test is based solely on the manufacture's claim, and the studies done by each manufacturer are generally small. Therefore there is no fail-safe test, or mix of testing and quarantine, that can guarantee that a vessel is free of the virus that causes COVID-19 before it leaves port. Testing may be used to lessen risk, but testing cannot completely eliminate the risk.

## Test Types

There are two categories of testing for SARS-CoV-2, which is the virus that causes COVID-19: **diagnostic tests**, which are used to provide a *diagnosis* of COVID-19, and **immunity tests**, which are used to evaluate for an *immune response* to SARS-CoV-2.

### *Diagnostic Tests*

The *diagnosis* of COVID-19, the disease caused by SARS-CoV-2 virus, is confirmed using an **RT-PCR test**. This is a nasal swab that looks for virus. It requires a professional to obtain the nasal swab and generally must be run in a lab. The accuracy of these tests has improved over the early course of the pandemic, but accuracy still varies from test manufacturer to test manufacturer. Accuracy of these tests is also highly dependent on proper sample collection technique, sample handling, and transport to the lab. This test also carries some risk to the individual collecting the sample.

### *Immunity Tests*

Immunity tests look for antibodies in the blood. Antibodies are produced by the body's immune system in **RESPONSE** to the virus. These tests can be run using a small kit in nearly any

location and are comparatively simple to administer. A small blood sample is typically collected via a sterile pinprick of the patient’s finger. The individual collecting the sample must still adhere to basic infection control precautions. The test looks for two markers in the blood call immunoglobulins (Ig):

1. IgM – a marker of acute infection. If IgM is detected it means the body is fighting the virus.
2. IgG – a marker of lasting immunity. The medical community is still unsure how effective the immunity is or how long it may last.

Typically after a person is infected with a virus, they eventually begin to “shed” the virus, meaning that they may potentially infect others around them. During this time the RT-PCR nasal swab test can detect the virus.

At some point, they may become symptomatic, and the body will start making IgM, which can be detected by the blood test. Later on, they will start to make IgG, which can also be detected by the blood test, and they will eventually stop making IgM. If they become re-infected in the future, the body “remembers” the virus with the IgG and the body will start making IgM again to fight the virus.

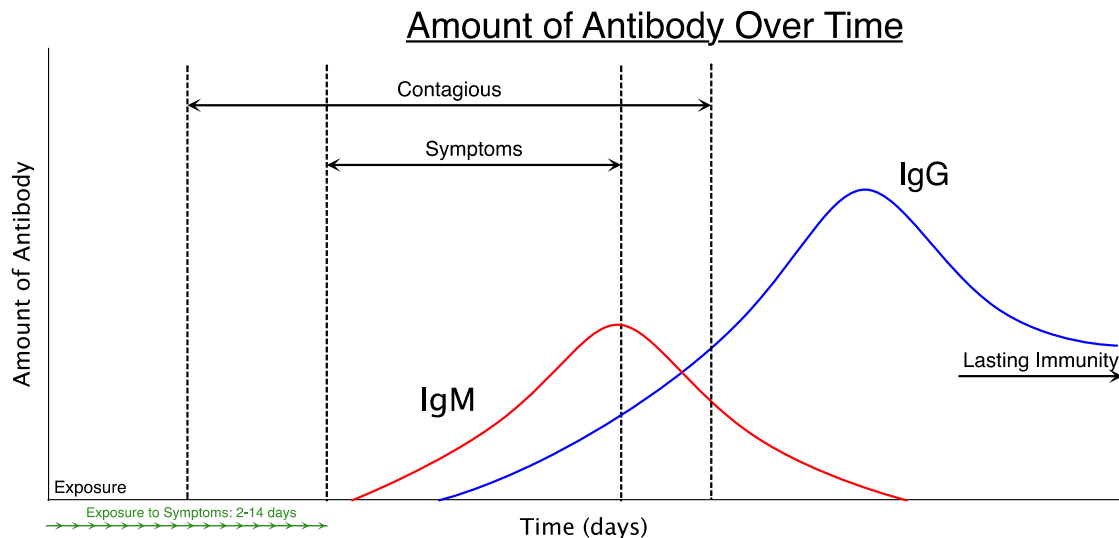


Figure 1: Infection Timeline

The above series of events is typical for most viruses. Figure 1 demonstrates our current understanding of these events for SARS-CoV-2. Patients with COVID-19 can be contagious both before and after they show symptoms, and some may be contagious but never show symptoms at all. Because those infected with SARS-CoV-2 do not typically develop antibodies until sometime after they become contagious, antibody tests cannot currently be used to rule-out infection. This issue is compounded by a great deal of variability in the reliability of the tests

from manufacturer to manufacturer.<sup>1</sup> **Because of these concerns antibody testing for COVID-19 cannot currently be used for clinical decision making.**

How are the Ig test results interpreted?

Although antibody testing for COVID-19 cannot currently be used for clinical decision-making, there will be emerging uses for these tests in disease surveillance. We provide the following detail on how the antibody tests are interpreted for reference.

Ig Type →	IgM	IgG	↓ Interpretation ↓
Detected by Test?	No	No	Negative Test, though there is a chance patient is infected and it's too early to detect immune response, or test is a "false negative"
	Yes	No	Patient is Infected, patient should be quarantined, monitored, and treated as needed; consider diagnostic testing (PCR)
	Yes	Yes	Patient is infected and has started to mount immune response
	No	Yes	Patient was infected at some point in the past, though if infection is recent patient may still be contagious

If there is any IgM detected, whether or not IgG is detected, the patient should be considered positive for COVID-19 (consider follow on PCR testing).

If there is no IgM or IgG detected, the test is negative. However, there is still a chance the patient is infected but an immune response can't yet be detected, or that the test is a "false negative". The patient should be re-tested after a period of self-quarantine to ensure the results haven't changed.

If there is no IgM detected but IgG is detected, the patient was likely previously infected and now has mounted and immune response. However, if the infection was recent, the patient may still be shedding virus and therefore may still infect others. At this point, re-testing would not be expected to show a different result, but the patient should be quarantined for a time to lessen the chance that they are still infected. In theory the patient IgG confers some measure of immunity, although we are not yet sure how effective this immunity is or how long it may last.

<sup>1</sup> <https://covidtestingproject.org/>

## Specific Recommendations

### General Precautions

The best way to manage COVID-19 is to attempt to avoid contracting it. Individuals will reduce their chance of contracting the virus or spreading it to others by integrating the following recommendations into their daily routine, whether ashore or aboard ship.

- 1) **Frequently clean and disinfect surfaces and objects that come into contact with multiple crew members (e.g. ship's wheel, radar screens, radios, bathrooms, dining areas, exercise rooms etc.). Consider developing a cleaning schedule that ensures routine cleaning at standard times such as the start of each watch, or with each boat check.**
- 2) Practice social distancing, which includes the following
  - a. Stay at least 6 feet from other people
  - b. Do not gather in groups
  - c. Stay out of crowded places and avoid mass gatherings
  - d. Further details and tips on social distancing can be found on the CDC website here: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html>
- 3) Wash hands frequently with soap and water or an alcohol based hand sanitizer.
  - a. Hands should be washed for a full 20 seconds and care should be taken to ensure that all surfaces of the hands and wrists are washed
  - b. more information on handwashing may be found here: <https://www.cdc.gov/handwashing/when-how-handwashing.html>
- 4) Avoid touching the face.
  - a. Every effort should be made to avoid touching the face, which would transfer infectious material from the hands to the mucous membranes of the eyes, nose, and mouth.
- 5) Wear a mask when in common areas.
  - a. Surgical masks are designed to catch respiratory droplets as people talk, breathe, or sneeze, and reduce the likelihood of transmitting the virus to others.
  - b. N-95 masks reduce the chance that the wearer will contract the virus when in the presence of an infected individual (see below section on care for an ill crewmember).
  - c. If the above are not available, homemade masks or other face coverings are currently recommended by the CDC, however the effectiveness of these coverings has not been fully tested.
  - d. These masks are not designed for repeat use however due to supply shortages it has become necessary in certain circumstances to reuse masks. If the supply of masks is limited and they must be reused, each crewmember should be issued multiple masks and they should be used in rotation. After a mask is used it should be stored in a paper bag labeled with the date of use and the following day the next mask should be used. Each should be stored and when a crewmembers individual supply of masks has been fully used, the mask worn on



the first day should be used again. Crewmembers should then cycle through their supply of masks in the same order as they were originally used. The storage in a bag is to allow any virus particles to lose their infectivity.

- e. More information on mask re-use may be found here:  
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html>
- 6) Cover coughs and sneezes with a tissue and throw the tissue away after use. Wash hands after coughing or sneezing
- 7) Gloves should not be worn for an extended period of time except during activities for which specific gloves are otherwise indicated
  - a. When latex or nitrile gloves are worn for an extended period of time they may become contaminated with coronavirus or other infectious or dangerous material. They may provide a false sense of security and are generally not routinely cleaned the way hands are when washed. Consequently, contaminated gloves may spread infectious material as the wearer touches multiple surfaces or his or her face.
  - b. Latex or nitrile gloves should be worn when cleaning potentially infectious surfaces. Appropriate protective gloves should also be worn if otherwise indicated (for example during activities such as cargo handling, rigging, welding, etc.).
- 8) Ensure that nails are trimmed.
- 9) Avoid Close Contact with those who are sick unless providing direct care.
  - a. The CDC defines a **close contact** as being within 6 feet of an infected individual for a prolonged period of time, or having unprotected direct contact with infectious secretions from the patient.

## How to clean and disinfect surfaces

The CDC provides detailed guidance on cleaning and disinfecting surfaces and objects. This guidance can be found here: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html>

## Prior to Embarkation

Every effort should be made to ensure that potential crewmembers do not embark on a vessel if they are sick or likely infect others.

Although there is no perfect way to ensure that a crew is free of the virus before embarkation, a very extended quarantine prior to embarkation is theoretically the best method to ensure that a crew has a low chance of carrying the virus. Most people tend to become symptomatic within 5-14 days, but there may be a very small number who still become symptomatic after 14 days.

Furthermore, some people become infected and shed virus without ever becoming symptomatic, but doctors don't yet know what percent of people never show symptoms or exactly how long they shed the virus. If you take a crew and put them on a ship under PERFECT quarantine (i.e. no individuals or objects in or out) and none of them become symptomatic, then with each day they are isolated the likelihood that the virus is present decreases. It is much lower on day 14 than on day 1, but it is not zero. It is lower still on day 30, and lower still on day 45. In theory it never reaches zero but at some point it becomes close enough to zero that you can reasonably conclude that it is safe to leave the dock. The challenge is in deciding how long that quarantine has to be to make the risk low enough that it is in balance with your operational needs.

When designing a pre-embarkation screening strategy, it is important to recognize that different vessels may require different strategies, and that *the human, economic, and operational costs of an infection aboard must be weighed against the human, economic, and operational costs of a particular screening strategy*. For example, a vessel with a planned 3 day near-coastal voyage with a mission of comparatively low operational priority may be able to tolerate more risk than a vessel with a planned 2 month off-shore voyage with a comparatively high operational priority. The vessel far from shore will have a longer transit time to port in case of illness, and the consequences of diversion are more substantial. Additionally, it may not be practical for a crew to quarantine for a period that is many times longer than the planned time at sea.

Because operational needs may make complete quarantine for 14 days impractical or impossible, and testing may not be available, **we recommend that each maritime client develop an individual policy on quarantine, testing, and disease management that fits within their unique operational needs. We provide the following guidance to assist in policy development.**

#### Keeping the Virus off the Vessel: Crew Changes

Crew changes should be kept to a minimum, meaning that crew deployments may have to be extended to keep vessels operational.

New crew who are rotated on to the vessel should be screened for symptoms of COVID-19, quarantined for a period of time, and where possible, tested for COVID-19 prior to embarkation.

#### Screening

Ideally, crew members should be screened 14 days in advance of embarkation. If this is operationally unrealistic, screening should take place as far in advance of embarkation as possible. Screening should include, at a minimum, the following questions:

- 1) In the last 14 days, have you had any symptoms of COVID-19, such as fever, cough, shortness of breath, loss of smell or taste etc.? (please see “symptoms” section above for more complete list)
- 2) In the last 14 days, have you had contact with a person who was known to have, or suspected of having COVID 19?
- 3) In the last 14 days, have you been in an area with known high rates of COVID-19, without adhering to good social distancing guidelines?

If the answer to question 1 is “YES”: The screened crewmember should not join the crew. He or she should be tested according to local testing availability wherever he or she is located, and should be under the care of a local physician. He or she should not join a crew until after CDC return to work criteria have been met. **The CDC recommendations that describe when a person may return to work can be found here: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>** We further recommend that after these criteria are met the potential crew member undergo an additional 14 day quarantine before joining a crew.

If the answer to question 2 or question 3 is “YES”: The screened crew member should undergo a 14 day quarantine, **at an absolute minimum**, prior to joining a crew (see below).

If the answer to all 3 questions is “NO”: We still recommend that the screened crewmember undergo a 14 day quarantine. If this is not possible, we recommend that the screened crewmember undergo a quarantine for as long as possible prior to embarkation.

### *Self Quarantine*

After initial screening, all crewmembers should undergo a period of self quarantine. The goal of the quarantine period is to observe each potential crewmember for signs of infection during a period when their exposure to infected individuals is at a minimum.

**Duration of Self Quarantine:** Quarantine should ideally last 14 days to capture late symptom onset. This is because symptoms will typically appear within 2-14 days of exposure, with a peak 5 days after exposure.<sup>2</sup> Occasionally, an individual may develop symptoms more than 14 days after exposure. If it is not operationally feasible to set a 14 day quarantine period, a quarantine period as close to 14 days as possible should be selected.

**Location of Self Quarantine:** Quarantine should ideally be as close to the vessel as possible. While it may be operationally more practical to have each crewmember quarantine at home, travel to the vessel at the end of the quarantine period carries risk that the crewmember will be

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<sup>2</sup> <https://annals.org/aim/fullarticle/2762808/incubation-period-coronavirus-disease-2019-covid-19-from-publicly-reported>

exposed to SARS-CoV-2 in transit. A hotel near the vessel may be a practical alternative, with each crewmember staying in his or her room. If this option is used, contact between crewmember during the pre-embarkation quarantine should be kept to a minimum. If a crewmember becomes symptomatic during this time, any crew-members with whom he or she has had contact would have to start a new period of quarantine. Pre-voyage quarantine should ideally not occur on a vessel. If pre-voyage quarantine must occur on a vessel, crew-members should minimize contact and spend the majority of their time in a private cabin.

**Quarantine Practices:** The following practices should be adhered to as best as possible during quarantine:

- 1) Contact between the individual under quarantine and other individuals should be kept to an absolute minimum. This means that potential crew members under pre-voyage quarantine at the same location should not congregate for meals or social activities. If potential crew members are quarantining at home, they should attempt to minimize contact with family members.
- 2) Individuals under quarantine should check their temperature twice a day if a thermometer is available, and should check their arterial oxygen saturation (blood oxygen) twice a day if a pulse oximeter is available. These pieces of equipment should not be shared between individuals under quarantine. A temperature above 100.4°F (38°C), or an arterial oxygen saturation below 95% should prompt further investigation. A single out of range reading it may be aberrant but persistent abnormalities should disqualify an individual under quarantine from joining a crew.
- 3) Individuals under quarantine should also complete a daily symptom questionnaire and those who develop concerning symptoms should be disqualified from joining a crew.

If individuals under quarantine become disqualified from joining a crew, they should undergo testing per local availability and should establish care with a local physician. As in the above case of failure during prescreening, he or she should not join a crew until after CDC return to work criteria have been met. **The CDC recommendations that describe when a person may return to work can be found here: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>** We further recommend that after these criteria are met the potential crew member undergo an additional 14 day quarantine before joining a crew.

### *The Role of Testing During Quarantine*

Combining testing, if available, with quarantine may decrease the likelihood that an asymptomatic carrier of coronavirus joins a crew. For example, if all crew are tested with nasal swabs during quarantine, and one asymptomatic potential crewmember tests positive than that potential crewmember should not join the crew.

However, all current tests are better at ruling in infection than they are at ruling out infection, and no single test can reliably and definitively rule out infection. After an extensive review of medical literature, it appears that the timing of antibody formation appears to be too late in the disease course for antibody tests to be used to rule out SARS-CoV-2 during a 14 day quarantine.

The GW MMA is actively considering the possibility that use of certain testing during quarantine may be used to shorten the duration of quarantine. **At the time of this writing our recommendation is that testing should only be used to rule-in infection, and should not be used to rule-out infection.**

### Aboard Ship

Aboard each vessel we recommend that crew follow advisories on how to avoid contracting and transmitting the virus, and also that crew are vigilant about identifying and isolating potential cases. Shipboard policies should address transmission reduction and disease management, should any crew member become ill.

### Access Control

To the extent possible we recommend that only screened and quarantined crewmembers be allowed aboard vessels. Screened and quarantined individuals should have a final symptom check and temperature taken immediately prior to boarding.

Deliveries of ships stores should be left on land rather than delivered aboard, and brought aboard by crew who have been appropriately screened.

If unscreened individuals must come aboard the vessel (for example local pilots, engineers, or others conducting repairs), we recommend the following:

- 1) These individuals should be asked about recent COVID-19 symptoms and contact with known or suspected COVID-19 patients in the last 14 days. Consider denying entry if there have been any recent symptoms or concerning contacts unless operationally infeasible.
- 2) These individuals should also be screened for fever using a non-contact thermometer, if one is available, prior to coming aboard.
- 3) While aboard, unscreened individuals should wear a face covering, ideally a surgical mask that covers the face and nose. They should also frequently wash hands. If possible provide hand sanitizer at the point at which they come aboard.
- 4) Unscreened individual's contact with screened crew should be kept to an absolute minimum.
- 5) Unscreened individuals should only be permitted in spaces that are absolutely necessary for them to carry out their work.
- 6) Spaces that have been visited by unscreened individuals should be cleaned and disinfected after the unscreened individual disembarks.

## Prevention

All crew should practice prudent standard infection precautions. These are described in the “General Precautions” section above. **It is critically important that all crew adhere to best practices. Crew should be empowered to point out lapses in best practices to others, regardless of job or rank. We also feel that it is important that crew feel comfortable expressing that they do not feel well if they develop symptoms, as a missed infection could have substantial consequences.**

In addition to adhering to infection precautions we recommend the following:

- 1) Unnecessary social gathering should be kept to a minimum while aboard until a vessel has been at sea for a period long enough to be reasonably sure that no crewmember is infected. This may mean closing or limiting the maximum occupancy of common spaces.
- 2) Individual crewmembers should generally only occupy their own living spaces and working spaces that are essential for their particular job function.
- 3) If possible, all crew should have private living spaces during the duration of the Coronavirus pandemic.
- 4) Consider daily temperature checks at pre-set times (such as at the beginning of each watch), and consider having each crew member complete a daily symptom questionnaire to be reviewed by the medical officer each day. These may identify illness early.
- 5) A cleaning and disinfecting schedule should be developed and adhered to. High touch working surfaces such as controls for ship’s systems, radios, radar screens, etc. should be cleaned and disinfected according to a regular schedule. Consider high touch surfaces in areas other than the bridge or engineering spaces, such as refrigerator handles or soda dispensers in the galley, flush handles and faucets in the heads, water fountains, doorknobs, hatch handles, etc.
- 6) Stewards or others who prepare food should practice strict hand hygiene and should wear masks while cooking.
- 7) Consider having galley staff serve food rather than using buffet service. If buffet service is used, consider allowing individuals to use their own utensils (prior to eating with them) to take food rather than using common serving utensils that are touch by multiple people.
- 8) Consider limiting social contact during meals or limiting the number of people who may be in the ship’s mess at a given time.

## If a Crewmember Becomes Ill

### *Pre-planning*

Caring for an ill crew member should begin prior to embarkation. A plan of care should include the following at a minimum:

- 1) **Where will the ill crew member isolate?** Crew members who develop symptoms will have to isolate aboard the vessel. Ideally a space for isolation will be identified in advance. It may be the crew-members own quarters, however it may be another private space. This space should ideally have its own head. If a head outside the isolation room must be used, it should be as close as possible to the isolation room and should only be used by crew who are in isolation.
- 2) **Who will care for the ill crew member?** He or she may have both medical and non-medical needs. Thought will have to be given to how supplies and waste go to and from the isolation room. This is addressed below in greater detail. If another crewmember aboard is known to have previously had the coronavirus and recovered, or has tested positive for SARS-CoV-2 IgG, it may be prudent to designate this individual to care for the ill crew-member. **Contact with an ill crewmember should be brief and adhere to good social distancing practices** (e.g. maintain 6 feet of separation if possible).
  - a. **Ideally a single individual will be designated to have contact with the isolated crew-member – this individual must be trained in the use of PPE**
- 3) **Which individual crewmembers are critical to the safe operation of the vessel, and how many crewmembers could become ill before vessel operation is jeopardized?** There should be a diversion or crew augmentation plan in case critical members of the crew become ill, or multiple members of the crew become ill.
- 4) **What must happen immediately after crewmember becomes ill?** Suggested steps are below. Consider having a plan to further limit crew interaction and limit crew movement.

#### *Discovery of Illness*

Crew should be encouraged to report all illness to the medical officer, no matter how seemingly minor, immediately. If a crew member develops coronavirus symptoms the following suggested steps should be taken:

- 1) He or she should immediately be isolated in the pre-determined isolation space.
- 2) Call GW Maritime Medical Access to open a case and begin medical management.
- 3) Close contacts should be traced and questioned about symptoms. Depending on the type of vessel and size of crew, this may mean that all crew members are considered close contacts.
  - a. The CDC defines a **close contact** as being within 6 feet of an infected individual for a prolonged period of time, or having unprotected direct contact with infectious secretions from the patient.
- 4) If the infected individual has a roommate, he or she should also be isolated.
- 5) If there is testing aboard, the infected individual and close contacts should be tested. Remember that a negative test, especially an antibody test, does not definitely rule the disease out.
- 6) Anyone who has contact with the quarantined individual should be wearing appropriate personal protective equipment. This includes an N95 mask (surgical mask if an N95 is not available, splash goggles or face shield, isolation gown, and gloves. Disposable shoe

covers and hear covering should also be used if available. The ill crewmember should also wear a surgical mask while the caregiver is in the room.

- a. This personal protective equipment must be properly put on (donned) and taken off (doffed) before and after the caregiver is in the room.
  - b. Details on the proper way to don and doff PPE may be found on the CDC website here: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>. This site also includes a video on appropriate donning and doffing, and has information sheets and posters that may be downloaded to keep on a vessel.
  - c. It is very important to perform hand hygiene (washing) after PPE is doffed
  - d. We also recommend that multiple crew members be familiar with donning and doffing procedures. An individual or individuals can be designated as safety officers to observe the caregiver donning and doffing to ensure that no contamination occurs during these procedures.
- 7) Any items that the ill crewmember needs should be delivered to the room, including meals. Consider using disposable tableware for this individual to avoid bringing dishes and flatware back to the galley. If this is not possible, dishes and flatware should be considered infectious, and should be brought back to the galley in bags by an individual wearing PPE, and either placed in a dishwasher, or washed by this individual.
- 8) Any items brought out of the room, such as garbage or laundry, should be considered infectious, and should be bagged and handled by persons wearing appropriate PPE until disposed of or laundered.
- 9) The CDCs guidance on caring for someone in isolation outside of a healthcare setting has more information on how to manage contact with an ill individual, and on managing the flow of items in and out of the isolation space: <https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/care-for-someone.html>
- 10) The CDC recommendations that describe when a person may return to work can be found here: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>

## In Port

We recommend that prior to visiting any port, captains and crews adhere to the following:

- 1) Prior to docking in any port, please refer to the WHO and CDC travel advisories (<https://wwwnc.cdc.gov/travel>). In addition, local port authorities might have advisories that are in effect that should be considered.
- 2) While in port, we suggest that close contact with local populations be limited only to what is necessary to conduct business.
- 3) Crewmembers not disembarking should remain on the vessel unless they must go ashore to conduct business related to the operation of the vessel, or to seek medical care if it has been recommended by GW MMA.



## Education and Training

We recommend that all crewmembers should be educated on best practices and should be made aware of company policies on the management of COVID-19. In particular all crew should:

- 1) Be aware of the signs and symptoms of COVID-19 and be encouraged to report illness.
- 2) Be educated on, and encouraged to practice frequent hand hygiene and other infection control practices.
- 3) Be familiar with the ship's disease surveillance and response plan.
- 4) Be educated on the company's pre-embarkation procedures.
- 5) Know how COVID preparedness impacts day to day ship operations (extra cleaning, limits on social gatherings, etc.).
- 6) Know how COVID preparedness impacts operations while in port and while essential non-screened individuals such a local pilots are on board.

We recommend that any company policies be readily available to all crew, and that in-person or computer based training classes be conducted with crew-members to ensure that they are aware of the above.

## Additional Resources

Where possible we have linked to specific sources that may be updated over time. The following resources will provide additional information.

The CDC's Coronavirus Disease 2019 Guidance for Ships may be found here:

<https://www.cdc.gov/quarantine/maritime/recommendations-for-ships.html#>

The WHO's Operational Considerations for Managing COVID-19 cases/outbreak on board ships may be found here: <https://www.who.int/publications-detail/operational-considerations-for-managing-covid-19-cases-outbreak-on-board-ships>