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1.1 Introduction

This plan is in response to the COVID-19 global pandemic, a disease caused by a novel (new) strain of coronavirus labeled SARS-CoV-2. This plan is based on recommendations and requirements from the World Health Organization (WHO), Center for Disease Control (CDC), United States Coast Guard (USCG), International Chamber of Shipping (ISC), Discovery Health MD, GW Maritime Medical Access, State of Washington, and University of Washington (UW).

1.2 Purpose

The purpose of this COVID-19 Outbreak Management Plan is to outline the essential steps R/V Thomas G Thompson crew shall take to care for infected patients and prevent the spread of the virus to non-infected crew and scientists.

This plan is to be used in conjunction with;
● R/V Thompson’s Safety Management System (SMS)
● George Washington Maritime Medical Access (GW MMA)
● State and local health officials in vessel operating area
● University National Oceanographic Laboratory System (UNOLS) guidelines

2.0 Reporting

The Master and/or Medical Officer (Chief Mate) will report any individuals with flu-like symptoms or other possible symptoms of COVID-19 to the following:
● Designated Person Ashore, Robert Kamphaus, Manager Marine Operations
  Office: 206-685-5672  Cell: 206-225-0562  email: kamphaus@uw.edu
● Meegan Corcoran, Port Captain
  Office: (206) 221-6920  Cell: 360-929-9034  email: meeganc@uw.edu

The Master and/or Medical Officer (Chief Mate) will report any serious illness and suspected cases of COVID-19 to the following:

The Master will report any serious illness suspected COVID-19 case to the following:
● Designated Person Ashore, Robert Kamphaus, Manager Marine Operations
  Office: 206-685-5672  Cell: 206-225-0562  email: kamphaus@uw.edu
● USCG, Captain of the Port; under USCG Marine Safety Information Bulletin 06-20
● Centers for Disease Control, under USCG Marine Safety Information bulletin 06-20

2.1 USCG Marine Safety Information Bulletin 02-20 (Change 5); 27 May 2020 States:

An outbreak of respiratory illness caused by novel coronavirus (COVID-19) continues to affect mariners and maritime commerce. Vessel arriving to or traveling between any U.S. port or place must follow reporting and infection control measures to maintain the safety of personnel onboard vessels as well as within the port.
Vessel Reporting Requirements:

Illness of a person onboard any vessel that may adversely affect the safety of a vessel or port facility is a hazardous condition per 33 CFR 160.216 and must be reported immediately to the U.S. Coast Guard Captain of the Port (COTP). Cases of persons who exhibit symptoms consistent with COVID-19 must be reported to the COTP. This requirement is separate and additional to any other Coast Guard or Center for Disease Control and Prevention (CDC) reporting, and apply to vessels departing from or arriving to any port or place in the U.S., includes internal waters, the territorial seas, and deep water ports.

In addition to Coast Guard reporting requirements, 42 CFR 71.21 requires vessels destined for a U.S. port to report to Centers for Disease Control and Prevention (CDC) any sick or deceased crew/passengers 15 days prior to arrival at the U.S. port. Guidance to vessels to report deaths and illness to the CDC can be found at: Cargo vessels and Cruise ships. caU.S. flagged commercial vessels are also advised to report ill crewmembers in accordance with the requirements of each foreign port called upon. Further, 42 CFR 70.4 states the master of any vessel or person in charge of any conveyance engaged in interstate traffic, on which a case or suspected case of a communicable disease develops shall, as soon as practicable, notify the local health authority at the next port of call, station, or stop, and shall take such measures to prevent the spread of the disease as the local health authority directs.

See MSIB 06-20, “Vessel Reporting Requirements for Illness or Death”, (pasted below) for further information.

2.2 USCG Marine Safety Information Bulletin 06-20; 13 March 2020 States:

An outbreak of respiratory illness caused by novel coronavirus (COVID-19) is affecting mariners and maritime commerce. This MSIB serves as a reminder that the illness of persons on board a vessel must be reported to both the Coast Guard and the Centers for Disease Control and Prevention (CDC). Reporting delays create significant challenges to protect persons on board vessels and, more broadly, maintain an effective Marine Transportation System. Vessels or masters that do not immediately report illness or death among passengers or crew may face delays and disruption to passenger and cargo operations including a requirement to return to the previous port after sailing. Additionally, vessels and masters are subject to Coast Guard enforcement action, which include civil penalties, vessel detentions, and criminal liability. Illness of a person onboard a vessel that may adversely affect the safety of a vessel or port is a hazardous condition per 33 CFR 160.216 and the owner, agent, master, operator, or person in charge must immediately notify the nearest Coast Guard Captain of the Port (COTP).

It is critical to report persons who exhibit symptoms consistent with COVID-19 or other illness to the COTP. 42 CFR 71.1 defines an ill person onboard a vessel as one that has:

(A) Fever (has a measured temperature of 100.4 °F [38 °C] or greater; or feels warm to the touch; or gives a history of feeling feverish) accompanied by one or more of the following:

  o skin rash
  o difficulty breathing or suspected or confirmed pneumonia
o persistent cough or cough with bloody sputum
o decreased consciousness or confusion of recent onset
o new unexplained bruising or bleeding (without previous injury)
o persistent vomiting (other than sea sickness)
o headache with stiff neck

(B) Fever that has persisted for more than 48 hours
(C) Acute gastroenteritis, which means either:
o diarrhea, defined as three or more episodes of loose stools in a 24-hour period or what is above normal for the individual
o vomiting accompanied by one or more of the following:
one or more episodes of loose stools in a 24-hour period, abdominal cramps, headache, muscle aches, or fever (temperature of 100.4 °F [38°C] or greater);

Additionally, as required by 42 CFR 71.21, the master of a ship destined for a U.S. port shall report immediately to the quarantine station at or nearest the port at which the ship will arrive, the occurrence, on board, of any death or any ill person among passengers or crew (including those who have disembarked or have been removed) during the 15-day period preceding the date of expected arrival or during the period since departure from a U.S. port (whichever period of time is shorter).

Guidance and forms to report deaths and illnesses to the CDC can be found at: https://go.usa.gov/xdjmj.

3.0 Prevention of Spreading

The R/V Thomas G Thompson will use the following steps as needed to prevent the spread of the coronavirus. These procedures are further described in the vessels Health & Safety Plan.

3.1 Screening of Crew, Science Personnel, and Contractors

All crew and science personnel will be required to conduct a 14-day isolation period prior to meeting the vessel. If the person flies to the port of embarkation, the person MUST self-isolate in a hotel or rental for those 14 days and follow the strict self-isolation instructions found on Page 4 of the Discovery Health On Board Procedures. If the person is able to drive to the vessel then they may choose to self-isolate at home, but must still adhere to the self-isolation instructions as well as anyone they share a home with. Extreme care must be taken when driving to the vessel (ie, wear a mask and gloves when fueling or using a public restroom).

The UW MAROPS team will conduct pre-screening of all crew and science personnel as described in the Health & Safety Plan. MAROPS will review and clear individuals for joining the vessel in conjunction with medical guidance.

The use of contractors on board will be severely restricted while the vessel is in an operational period. Any request for contractor support will be highly scrutinized and will only be permitted if required to meet regulatory requirements or if necessary to keep the vessel operational.
Contractors and inspectors will be screened and will have their temperature taken before boarding the vessel. If contractor/inspector is cleared, they will don a mask and gloves and maintain social distance with all crew and science party members. Additional procedures are outlined in the Health & Safety Plan.

3.2 Personal Hygiene

Signs are posted around the vessel in common spaces and public heads reminding people to wash their hands often and best techniques.

Signs are posted around the vessel with information about COVID-19 and ways to prevent the spread of the virus by social distancing, covering coughs and sneezes, not touching one’s face, wearing a mask when outside of their stateroom, and using hand sanitizer.

Hand sanitizer will be provided by the ship and placed in all labs, on the bridge, engine control room, and mess deck.

3.3 Vessel Cleaning and Sanitation

The ship’s crew will clean and disinfect the vessel daily using disinfectant products, bleach and water mixtures and/or disinfectant wipes. Special attention will be given to frequently touched surfaces (handrails, doorknobs, phones, switches, remotes, touch screens) and if required by the Master or Medical Officer shall be cleaned twice daily.

Bleach and water mixture instructions:
- Use cool water, not warm or hot water, for mixing.
- Mix fresh solutions for sanitizing and disinfecting. If using a spray bottle, mix daily, and if using a bucket with rags, make a new batch every 2-4 hours.
- Always add the bleach to the water.
- Do not mix liquid bleach with other cleaning products.
- Sanitization solution: Add 1 teaspoon bleach to 1 gallon of water.
- Disinfecting solution: Add 2 tablespoons bleach to 1 gallon of water.
- Special disinfecting solution (for cleaning bodily fluids from surfaces):
  Add 1 cup bleach to 1 gallon water.

The HVAC system filter material will be kept clean and changed at frequent intervals or by the direction of the Chief Engineer or Master. According to the most current information regarding COVID-19, the virus is not believed to spread via ventilation systems (large droplet transmission), but precautions will be taken.

3.4 On-Going Symptom Monitoring

All crew members will have their temperature taken and recorded daily by the Medical Officer. Crew are responsible for communicating any change to their health including any symptoms listed for the COVID-19 to the Medical Officer who will then report to the Master.

All science party members will have their temperature taken and recorded daily by the lead Marine Technician. The Marine Technician is responsible for ensuring all science party members are tested
daily. All science personnel are responsible for communicating any change to their health including any symptoms of COVID-19 to the Medical Officer who will then report to the Master. See section 2.0 Reporting Section (A) for COVID-19 symptoms.
4.0 Suspected Case

Without the availability of a test for COVID-19, an ill patient with the following symptoms will be suspected of having COVID-19 and will be put in isolation using these guidelines. The Master will notify the MAROPS team and the Medical Officer will start a case file with George Washington MMA. The following symptoms from the International Chamber of Shipping will be a suspected case and require a Suspected Case Response:

- A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g. cough, shortness of breath), and with no other set of causes that fully explains the clinical presentation and a history of travel to or residence in a country/ area or territory reporting local transmission of (COVID-19) during the 14 days prior to the onset of the symptoms.

- A patient with any acute respiratory illness and having been in contact with a confirmed or suspected COVID-19 case during the 14 days prior to the onset of the symptoms.

- A patient with severe acute respiratory infection and requiring hospitalization and with no other set of causes that fully explain the symptoms.

The updated list of symptoms from the CDC lists the currently known symptoms of COVID-19. All personnel should self-monitor for these symptoms and any unexplained symptom or combination of symptoms should be reported to the Medical Officer.


People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness.

Symptoms may appear 2-14 days after exposure to the virus. People with these symptoms may have COVID-19:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

This list does not include all possible symptoms. CDC will continue to update this list as we learn more about COVID-19.

A graphic of common symptoms is also at the end of this document (p 9).

4.1 Suspected Case Response

If there is an individual suspected of having COVID-19 due to symptoms presented to the ship’s Medical Officer (Chief Mate), then the individual will be sent to their room for assessment. This is to reduce the chance of contamination of the ship’s hospital which may be required for other
emergencies. The Medical Officer will report the situation to the Master before donning proper PPE for the assessment. The individual with symptoms will be given an N-95 rated mask to wear to reduce the chance of spread. Proper PPE for care provider information at:


This graphic can also be found at the end of this document (page 10-11)

After assessing the patient, the Medical Officer will immediately contact GW MMA for medical guidance. If GW MMA agrees with the suspected COVID-19 determination, the ship will immediately transit to the nearest port with adequate medical resources to evacuate the patient to a higher level of care.

If unable to contact GW MMA, and the Medical Officer suspects COVID-19 after fully assessing the patient, then the ship will immediately transit to the nearest port with adequate medical resources evacuate the patient to a higher level of care.

The Master will make the required notification in Section 2.0 and notify the local health authorities for the planned port of evacuation.

4.2 Isolation Plan of Suspected Patient
A suspected person with COVID-19 will be isolated in the Chief Science Room (stateroom #2). This stateroom has a phone for communication to the Medical Officer and Bridge, as well as having its own head.

The isolated person will not be allowed to leave the room and will wear a mask when being checked on by the Ship’s Medical Officer or being transferred to another area. The patient’s old room will have restricted access for 3 hours as per recommendations and then the space will be disinfected by personnel wearing proper PPE. All PPE worn disinfecting the room will be doffed at the entrance to the room and placed in plastic garbage bags.

Meals for the isolated person will be provided on paper plates and plastic utensils by a designated person wearing PPE. Arrangements will be made to collect garbage from the isolated room daily.

If more than one person is suspected of having COVID-19 Rooms used for isolation will be the New Science Rooms Staterooms # 35, #33, # 34, #32 in that order and following above procedures.

4.3 Patient Care
The Ship’s Medical Officer will provide care for the patient with the direction and instruction from the medical provider George Washington MMA. The patient will be checked on and vitals monitored. The provider will be in full PPE and the patient will wear a mask for all interactions with the provider.

The symptoms of the COVID-19 have shown to be mild in some patients and a severe acute respiratory infection in others. George Washington MMA will be notified immediately of any change in a patient’s condition. A severe case of the disease or rapid progression of symptoms may require a MEDEVAC.
5.0 Extra Measures When a Suspected Case on Board

The following procedures will be implemented for the duration of the pandemic:

Common areas of the vessel will be disinfected twice daily when underway, and at least daily inport.

All personnel are required to wear a facemask when outside their stateroom per US Navy instruction. The Master may relax this requirement when risk is deemed low (ie after 14 days underway with no symptoms).

The following procedures will be implemented when a suspected case is aboard:

Vessel will be disinfected more frequently than twice daily with special focus on the public heads and common areas. Bridge and Main Control (and other watchstanding areas) will be disinfected at each watch change by the offgoing watch.

All personnel are required to wear a facemask when outside their stateroom – no exceptions.

The galley will serve meals to individuals as cafeteria style on paper plates and disposable utensils. Meals for the suspected positive patient will be delivered to the isolation stateroom by someone in proper PPE and left with no direct contact.

Meals will be served in shifts limiting the number of people eating the mess at one time. The guideline of one person to a table on the messdeck shall be used when possible.

Social Distancing from one another of 6 ft whenever and wherever possible.

Vessel Lounge will be closed to mitigate people gathering in the same room.

Vessel Library will be limited to 3 people at a time to limit people gathering keeping social distancing.

Vessel Gym will be closed.
Symptoms of Coronavirus (COVID-19)

Know the symptoms of COVID-19, which can include the following:

- Cough
- Fever
- Chills
- Muscle pain
- Shortness of breath or difficulty breathing*
- Sore throat
- New loss of taste or smell

Symptoms can range from mild to severe illness, and appear 2-14 days after you are exposed to the virus that causes COVID-19.

*Seek medical care immediately if someone has emergency warning signs of COVID-19.

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Bluish lips or face

This list is not all possible symptoms. Please call your medical provider for any other symptoms that are severe or concerning to you.
Use Personal Protective Equipment (PPE) When Caring for Patients with Confirmed or Suspected COVID-19

Before caring for patients with confirmed or suspected COVID-19, healthcare personnel (HCP) must:

- **Receive comprehensive training** on when and what PPE is necessary, how to don (put on) and doff (take off) PPE, limitations of PPE, and proper care, maintenance, and disposal of PPE.
- **Demonstrate competency** in performing appropriate infection control practices and procedures.

**Remember:**
- PPE must be donned correctly before entering the patient area (e.g., isolation room, unit if cohorting).
- PPE must remain in place and be worn correctly for the duration of work in potentially contaminated areas. PPE should not be adjusted (e.g., retying gown, adjusting respirator/facemask) during patient care.
- PPE must be removed slowly and deliberately in a sequence that prevents self-contamination. A step-by-step process should be developed and used during training and patient care.

**Preferred PPE – Use:** N95 or Higher Respirator
- Face shield or goggles
- N95 or higher respirator
- When respirators are not available, use the best available alternative, like a facemask.
- One pair of clean, non-sterile gloves
- Isolation gown

**Acceptable Alternative PPE – Use:** Facemask
- Face shield or goggles
- Facemask
- N95 or higher respirators are preferred but facemasks are an acceptable alternative.
- One pair of clean, non-sterile gloves
- Isolation gown

[www.cdc.gov/coronavirus]
Donning (putting on the gear):
More than one donning method may be acceptable. Training and practice using your healthcare facility’s procedure is critical. Below is one example of donning.

1. **Identify and gather the proper PPE to don.** Ensure choice of gown size is correct (based on training).
2. **Perform hand hygiene using hand sanitizer.**
3. **Put on isolation gown.** Tie all of the ties on the gown. Assistance may be needed by another HCP.
4. **Put on NIOSH-approved N95 filtering facepiece respirator or higher (use a facemask if a respirator is not available).** If the respirator has a nosepiece, it should be fitted to the nose with both hands, not bent or tented. Do not pinch the nosepiece with one hand. Respirator/facemask should be extended under chin. Both your mouth and nose should be protected. Do not wear respirator/facemask under your chin or store in scrubs pocket between patients.*
   - **Respirator:** Respirator straps should be placed on crown of head (top strap) and base of neck (bottom strap). Perform a user seal check each time you put on the respirator.
   - **Facemask:** Mask ties should be secured on crown of head (top tie) and base of neck (bottom tie). If mask has loops, hook them appropriately around your ears.
5. **Put on face shield or goggles.** Face shields provide full face coverage. Goggles also provide excellent protection for eyes, but fogging is common.
6. **Perform hand hygiene before putting on gloves.** Gloves should cover the cuff (wrist) of gown.
7. **HCP may now enter patient room.**

Doffing (taking off the gear):
More than one doffing method may be acceptable. Training and practice using your healthcare facility’s procedure is critical. Below is one example of doffing.

1. **Remove gloves.** Ensure glove removal does not cause additional contamination of hands. Gloves can be removed using more than one technique (e.g., glove-in-glove or bird beak).
2. **Remove gown.** Untie all ties (or unsnap all buttons). Some gown ties can be broken rather than untied. Do so in gentle manner, avoiding a forceful movement. Reach up to the shoulders and carefully pull gown down and away from the body. Rolling the gown down is an acceptable approach. Dispose in trash receptacle.*
3. **HCP may now exit patient room.**
4. **Perform hand hygiene.**
5. **Remove face shield or goggles.** Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. Do not touch the front of face shield or goggles.
6. **Remove and discard respirator (or facemask if used instead of respirator).* Do not touch the front of the respirator or facemask.
   - **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.
   - **Facemask:** Carefully untie (or unhook from the ears) and pull away from face without touching the front.
7. **Perform hand hygiene after removing the respirator/facemask and before putting it on again if your workplace is practicing reuse.

*Facilities implementing reuse or extended use of PPE will need to adjust their donning and doffing procedures to accommodate those practices.

www.cdc.gov/coronavirus