CORONAVIRUS DISEASE 2019 READINESS GUIDE

VERSION 2.0

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Released by:

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The Bureau of Medicine and Surgery (BUMED) Coronavirus Disease 2019 (COVID-19) Reference Guide (CRG) provides amplifying guidance to meet the objectives of the references listed on page 2-4. Using expert consensus opinion, the BUMED CRG provides recommendations for addressing deployability, duty status, and return to duty (or return to work) during the COVID-19 pandemic.

The BUMED CRG will be periodically updated as new information is obtained. Updates will be posted at https://esportal.med.navy.mil/bumed/rh/m3/M34/CRG/default.aspx. In addition to the CRG, this site also provides links to key documents including some references supporting the CRG.

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CHANGES TO VERSION 2.0:

1. Military and Clinical Reference Update (pages 2-4).
2. Clarification of risk definitions associated with age (page 5).
3. Clarification of risk of COVID-19 complications based on vaccine status (page 5).
4. Rebranding risk table as "Deployment Risk Mitigation Matrix" as follows (pages 6-12):
    a. Decision to deploy made by commanding officer in consultation with medical officer.
    b. Medical conditions revised based on updated CDC guidance.
    c. Modified matrix header to reflect deployment assessment as favorable, moderately favorable, and unfavorable.
5. Elimination of medical waiver submission for Navy and Marine Corps embarked on shipboard operations.
6. ROM, quarantine, and isolation terminology is updated (page 13).
7. Recommendation for influenza testing in symptomatic patients with negative COVID-19 test (page 13).
8. Based on CDC guidance, updated evidence to inform the duration of isolation and precautions recommended to prevent transmission of SARS-CoV-2 to others (pages 13-14).
9. Links to asynchronous telehealth services for non-urgent cardiac consultation (page 15).
10. New return to exercise recommendations with accompanying figure and table (pages 16-17).
11. Updated BUMED waiver requirements for COVID-19 infection during Initial Entry Training (page 18-21).
12. Updated BUMED waiver requirements for COVID-19 infection for the U.S. Naval Academy, Reserve Officer Training Corps and U.S. Merchant Marine Academy (USMMA) if commissioning date is >28 days from time of completion of quarantine and return to exercise (page 18-21).
13. Link to updated Aerospace Medicine return to duty guidance (page 23).
14. Updated Undersea Medicine return to duty guidance (page 23).

REFERENCES

MILITARY REFERENCES

(a) CNO WASHINGTON DC 021344Z Jun 21 (NAVADMIN 110/21)
(b) DoD Force Health Protection Guidance (Supplement 16 - Revision 1) dated May 4, 2021
(c) DoD Instruction 1332.45 of 30 July 2018
(d) SECNAV WASHINGTON DC 171847Z Nov 20 (ALNAV 096/20)
(e) Naval Aerospace Medical Institute Aeromedical Waiver and Reference Guide
(f) DHA Procedural Manual 6025.13 Vol 4 dated 29 Aug 2019
(g) BUMED NOTICE 6300, "Navy Coronavirus Disease 2019 Vaccine Medical Temporary, and Medical Permanent Exemption for Medical Contraindication Approval Process," dated 3 Sep 2021
(h) DoD Clinical Guidelines for Post-Vaccination Associated Myopericarditis Version 12, DHA Immunization Healthcare Division, last reviewed 23 Aug 2021

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DEPLOYMENT RISK MITIGATION MATRIX FOR PERSONNEL AT HIGH-RISK FOR SEVERE COVID-19 ILLNESS

All personnel are at risk of significant illness or even death if they contract SARS-CoV-2, the virus that causes Coronavirus Disease 2019 (COVID-19). However, some personnel who contract COVID-19 have been identified as having a higher risk of becoming severely ill. In an effort to reduce the risk to ships and deployed units, reference (a) states, "The decision to deploy a high-risk individual must be made, at a minimum, by the commanding officer in consultation with medical providers. Immunization status should be part of the decision to deploy high risk personnel along with the percent of the unit immunized, the proximity to a military treatment facility or afloat medical facility with COVID therapeutics and intensive care capabilities, and medical provider consultation." Except for a select group of immunocompromised personnel, COVID-19 immunization effectively mitigates or significantly reduces the risk of severe illness or death. This deployment risk mitigation matrix offers guidance to providers preparing recommendations for their commanding officer. Immunization status should be considered in the deployment decision. Those with medical conditions that fall into the "favorable" or "moderately favorable" categories are low-risk for deployment if they are fully vaccinated.

- Reference (a) defines "high risk" as personnel that meet CDC criteria for increased risk. These criteria are outlined at: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-increased-risk.html. The risk is broken down into categories of **older adults, people with medical conditions,** and **pregnant and recently pregnant people**.
- The CDC does not define a specific "high-risk" age but presents a spectrum of risk rising with each decade over 18 years of age. This BUMED CRG will retain the high-risk definition of age greater than 64 years as the high-risk category used in prior NAVADMINs and BUMED CRGs.
- The following immunocompromised conditions as defined by the Infectious Disease Society of America (IDSA) guidelines (Rubin et al) may not mount an effective immune response to the vaccination (Boyarsky et al).
    - Primary immunodeficiency disorder
    - Receiving cancer chemotherapy
    - Within two months of solid organ transplantation
    - HIV with CD4 T-lymphocyte count < 200 cells/mm^3
    - Corticosteroid therapy with dose $\geq$ 20mg of prednisone equivalent for $\geq$ 14 days
    - Receiving biologic immune modulators such as tumor necrosis factor-alpha (TNF-α) blocker or rituximab
    - Hematopoietic stem cell transplantation – variable immunosuppression
- Geographic Combatant Commands (GCC) or Service Component Commands (SCC) guidance must also be considered.
- Reference (b) provides pre-deployment guidance on testing, screening, and restriction of movement (ROM).
- This matrix includes some conditions that are generally disqualifying for military service such as sickle cell disease, cystic fibrosis, and dementia, as it may be used to provide guidance to civilian or contract personnel.

Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
Age > 65	Not applicable	Not applicable	≥ 65 years of age
Cancer	1) Skin cancer or solid tumors after surgical removal with clean margins, low risk for recurrence, and no further treatment indicated. 2) Cancer in remission with no further treatment indicated except endocrine therapy with periods of surveillance or hormone treatment not to interrupt deployment (generally no more frequent than every 6 months). NOTE: currently, there is no conclusive evidence that a history of cancer increases risk for COVID-19 complications. Therefore, cancer in remission requiring surveillance intervals of 12 months or longer is not considered at increased risk for COVID-19 complications, but may require a GCC/SCC waiver.	1) No residual cancer but with recent cancer treatment within 6 months, no evidence of residual cancer, and no significant immune dysregulation (immune suppression increases risk, but up-regulating immunotherapy treatments might also increase risk). 2) No residual cancer, but surveillance intervals of less than 12 months but not less than 6 months.	1) Most current cancer diagnoses merit placement in a non-deployable status for evaluation and treatment. 2) Lymphoma or leukemia diagnoses where immune response may be compromised. 3) No residual cancer, but surveillance intervals of more frequent than 6 months.
Chronic kidney disease	Chronic Kidney Disease Stage 1 or 2	Chronic Kidney Disease stage 3 with optimal control and found medical suitable by nephrology within the previous year.	1) CKD stage 4 or 5 2) CKD with past or current requirement of dialysis. 3) Any level of chronic kidney disease for which chronic immunosuppressant medications are required.

TABLE 1 – Deployment Risk Mitigation Matrix

NOTE: Matrix includes conditions that are disqualifying for military service (e.g., sickle cell disease), as it may be used to provide guidance to civilian or contract personnel.
Source: the Centers for Disease Control and Prevention (CDC) https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/.

Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
Chronic lung diseases, including chronic obstructive pulmonary disease (COPD), asthma (moderate-to-severe), interstitial lung disease, cystic fibrosis, and pulmonary hypertension	NOTE: Mild intermittent or mild persistent asthma (Forced expiratory volume in one second (FEV-1) is > 70 %) is not considered at increased risk for COVID-19 complications.	To be considered within marginal control, chronic lung disease must meet the following enumerated criteria plus disease-specific criteria listed below: 1) No hospitalizations for associated condition within the last 12 months. 2) No endotracheal intubation within the last 12 months to manage the pulmonary condition 3) No use of daily oral systemic steroids within the last 12 months. 4) No exacerbations within the last 12 months requiring oral systemic steroids. DISEASE SPECIFIC ADDITIONAL CRITERIA: A. Mild COPD, GOLD Stage 1 with Forced expiratory volume in one second (FEV-1) > 80 % with diffusion lung capacity oxygenation (DLCO) > 60%. B. Moderate-to-severe asthma or restrictive lung disease with PFT showing FEV-1 >50% and ≤ 70%; DLCO > 40% and ≤ 60%; Force Vital Capacity (FVC) > 50% and ≤ 70%. C. Asymptomatic pulmonary fibrosis with input from pulmonary medicine within the last 12 months and found medically suitable for the deployment period.	Chronic lung disease showing characteristics outlined below are not recommended for deployment: 1) Hospitalizations for associated condition within 12 months. 2) Endotracheal intubation within the last 12 months to manage the pulmonary condition. 3) Treatment requiring daily oral systemic steroids within the last 3 months. 4) One or more exacerbations within 12 months requiring oral systemic steroids. DISEASE SPECIFIC ADDITIONAL CRITERIA: A. Moderate to very severe COPD, GOLD Stages 2-4 (FEV-1 ≤ 80%) with DLCO ≤ 60%. B. Moderate-to-severe asthma or restrictive lung disease with FEV-1 ≤ 50%; DLCO ≤ 40%; FVC ≤ 50%; DLCO ≤ 40%; FBC ≤ 50%. C. Cystic fibrosis D. Pulmonary fibrosis that is associated with symptoms or recurrent pulmonary disease.

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Source: the Centers for Disease Control and Prevention (CDC) https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/.

Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
Dementia or neurologic conditions	NOTE: Except for dementia, most neurologic conditions in sailors and marines do not confer increased risk with COVID-19 complications. If there are questions, please consult with Neurology.	Not applicable.	Deployment not recommended for dementia.
Diabetes, Type 1 or Type 2	Diabetes controlled (hemoglobin A1C ≤ 7%) with lifestyle modifications or metformin as the sole oral agent.	1) Treated with oral hypoglycemic agents other than or in addition to metformin. 2) Hemoglobin A1C is > 7% and ≤ 8%.	1) Treated with insulin. 2) Hemoglobin A1C is > 8%.
Down syndrome	Not applicable.	Not applicable.	Deployment not recommended.

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Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
Heart conditions • Heart failure • Coronary artery disease • Cardiomyopathies • Hypertension • Cardiac arrhythmia	1) History of coronary artery disease (CAD) that is asymptomatic on optimal medical therapy (OMT) for ≥ 180 days. Individuals must be able to achieve 10 metabolic equivalents (METS) using exercise treadmill testing or a similar objective measurement, and is found suitable for deployment by cardiology within the last year. 2) History of cardiac arrhythmia that are asymptomatic on OMT for ≥ 180 days, and found suitable for deployment by cardiology within the last year. 3) History of heart failure (HF) with OMT for ≥ 180 days and found suitable for deployment by cardiology within the last year. 4) Hypertension adequately controlled (BP <140/90) with oral medication or lifestyle modifications	1) History of CAD that is asymptomatic on OMT for ≥ 90 days but <180 days. Individuals must be able to achieve 10 METS using exercise treadmill testing or a similar objective measurement, and found suitable for deployment by cardiology within the last year. 2) History of coronary artery bypass graft, coronary artery stenting, myocardial infarction, carotid endarterectomy, other arterial stenting, or aneurysm repair, stable and on OMT ≥ 12 months with no symptoms and able to achieve 10 METS. 3) History of cardiac arrhythmias that are asymptomatic on OMT for ≥ 90 days but < 180 days, and found suitable for deployment by cardiology within the last year. 4) History of HF with OMT for ≥ 90 days but < 180 days, and found suitable for deployment by cardiology within the last year.	1) Symptomatic CAD. 2) Symptomatic cardiac arrhythmia. 3) New onset HF that has not been evaluated by Cardiology. 4) CAD, HF, or cardiac arrhythmia on OMT for < 90 days. 5) Any implantable electronic cardiac device (i.e., permanent pacemaker or implantable cardioverter-defibrillator). 6) Hypertension that cannot be adequately controlled (BP <140/90).

TABLE 1 – Deployment Risk Mitigation Matrix

NOTE: Matrix includes conditions that are disqualifying for military service (e.g., sickle cell disease), as it may be used to provide guidance to civilian or contract personnel.
Source: the Centers for Disease Control and Prevention (CDC) https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/.

Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
HIV infection	Well-controlled HIV infection is not considered an immunocompromised state. HIV-infected Sailors or Marines are reviewed and approved for operational duty by the Navy Bloodborne Infection Management Center (NBIMC) and their respective Service headquarters (PERS-454 or MMSR-4). HIV positive Service member may require waiver per DoDI 6490.07 or GCC/SCC guidance. Current evidence suggests that risk for COVID-19 complications is increased with low CD4+ T cell counts even with viral suppression.	Not applicable.	1) Viral Load ≥200 viral copies per milliliter) 2) CD4+ T cell count ≤200 3) AIDS defining illness
Immunocompromised State • Cancer treatment • Bone marrow or organ transplantation • Immune deficiencies • Prolonged use of corticosteroids or other immune weakening medications	1) Any immunocompromised state that has been evaluated by the appropriate specialty within the last 12 months and found medically suitable for the deployment period. 2) Short course of therapy that does not lead to chronic immune suppression (e.g., prednisone for less than 21 days for acute contact dermatitis). NOTE: Chronic Inflammatory Diseases (Ulcerative Colitis, Rheumatoid Arthritis, Psoriatic Arthritis, Ankylosing Spondylitis, Crohn's disease, etc.) are not considered immunocompromised unless on immunosuppressive therapy.	1) Recent cancer treatment within 6 months that could have residual immune dysregulation (immune suppression increases risk, but up-regulating immunotherapy treatments might also increase risk). 2) Recent immunosuppressive therapy within 6 months.	1) Any other primary or secondary immunodeficiency (including malignancy) that confers increased risk of infection, requires antimicrobial prophylaxis, or immunoglobulin replacement to maintain immunocompetency. This includes those patients who also need IVIG or antibacterial, antiviral, or antifungal prophylaxis. 2) Current use of systemic immunosuppressive therapy or up-regulating immunotherapy treatments.

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Liver disease	1) Chronic hepatitis secondary to fatty liver disease or nonalcoholic steatohepatitis (NASH) without evidence of liver dysfunction. 2) Previously treated hepatitis C without evidence of liver dysfunction. 3) Chronic inactive hepatitis B without evidence of liver dysfunction. 4) Chronic hepatitis of any etiology not mentioned above without evidence of liver dysfunction. NOTE: liver dysfunction is suspected if bilirubin, INR/PT/PTT are elevated; or if albumin or platelet count is low. Low platelets with elevated liver enzymes could be an early indicator of portal hypertension or cirrhosis.	1) Chronic hepatitis B on treatment without evidence of liver dysfunction. 2) Chronic hepatitis (any etiology) with advanced fibrosis (stage 3) without evidence of liver dysfunction. 3) Chronic inactive hepatitis B without evidence of liver dysfunction. 4) Chronic hepatitis of any etiology other than fatty liver or NASH and not mentioned above without evidence of liver dysfunction.	1) Liver cirrhosis. 2) Portal hypertension, esophageal varices, esophageal bleeding, or other complications of chronic liver disease. 3) Autoimmune hepatitis. 4) Active hepatitis B not currently receiving treatment or with detectable hepatitis B DNA on treatment. 5) Hepatitis C not previously treated or with evidence of either elevated liver dysfunction. 6) Previously unexplained elevated liver enzymes or unexplained elevated bilirubin or low platelet count.
Obesity (BMI ≥ 30)	BMI 30-35 NOTE: those that meet Service specific body composition standards (e.g., "tape-in") may not have increased risk for COVID-19 complications	BMI 36-39.9	BMI ≥ 40 NOTE: LIMDU/DES may not apply, see Service policy for appropriate disposition
Pregnancy and recently pregnant people	Not applicable.	Not applicable.	Deployment is not recommended during pregnancy or within 42 days following the end of pregnancy.

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Pre-Deployment High-Risk Condition Category	Good Control of High Risk Condition FAVORABLE FOR DEPLOYMENT	Marginal Control or Complications MODERATELY FAVORABLE FOR DEPLOYMENT	Non-Deployable High Risk Condition UNFAVORABLE FOR DEPLOYMENT Consider referral to Temporary Limited Duty (LIMDU) or Disability Evaluation System (DES)
Sickle cell disease or thalassemia	Not applicable NOTE: Sickle cell trait is not considered at increased risk of COVID-19 compilations.	Thalassemia risk should be addressed on a case-by-case basis.	Deployment not recommended for sickle cell disease.
Smoking, current and former	Cumulative smoking history of less than 20 pack years.	Cumulative smoking history of equal to or more than 20 pack years.	Not applicable
Solid organ or blood stem cell transplant	Not applicable.	Blood stem cell transplant immunodeficiency is highly variable, defer to hematologist for risk stratification	Deployment not recommended for solid organ transplant.
Stroke or cerebrovascular disease	History of stroke >2 years without residual symptoms	1) History of stroke > 1 year and ≤ 2 years without residual symptoms. 2) History of stroke without residual symptoms requiring ongoing treatment with anti-platelet or anticoagulant treatment.	1) Physical or mental residual symptoms requiring duty restrictions. 2) History of multiple strokes and/or transient ischemic attacks. 3) History of stroke < 1 year.
Substance use disorders	Not applicable.	Not applicable	Not applicable.

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CORONAVIRUS DISEASE 2019 (COVID-19) ALTERNATE DUTY STATUS

1. To limit further viral spread, two actions are taken: **Quarantine** is used after potential exposure and **Isolation** is used when an individual is infected, even if asymptomatic. Personnel who contract the Coronavirus Disease 2019 (COVID-19) have a variable course, but most can return to duty (RTD) or deploy soon after recovery. Duty status assignment and criteria for return to work (RTW) and deployability is outlined below for Sailors or Marines with potential exposure or who meet case definition or positive test for COVID-19. Reference (a) provides guidance for duty status. RTW criteria limit risk of transmission.

2. DUTY STATUS:
   a. COMMAND AND MEMBER NOTIFICATION: Per reference (a), the individual sick slip (DD Form 689) must be used to notify both the member and the chain of command of any test-confirmed or presumptive COVID illness, whether symptomatic or not. Section 11. Disposition and Section 12. Remarks, must clearly indicate the medically-recommended disposition, follow up, and isolation requirements. The sick slip must also be used to notify asymptomatic members and the chain of command of any patient (or person) under investigation (PUI) or close contact, quarantine, or isolation requirements. Beginning and ending dates of the quarantine/isolation period, symptom-free requirements, and medical follow up must be clearly indicated in section 12. (Remarks).
   b. DUTY STATUS FOR QUARANTINE AND RESTRICTION OF MOVEMENT (ROM): Those on quarantine or ROM are in an administrative status. There is no need to assign light duty, convalescent leave, or temporary limited duty (LIMDU). Reserve Component (RC) Sailors' orders should be extended to include ROM, per reference (b). Reference (b) also provides pre-deployment guidance on testing, screening, and ROM. Personnel that are fully vaccinated or fully recovered from a laboratory confirmed diagnosis of COVID-19 may not be required to ROM (reference (b)), but will adhere to public health measures such as distancing and mask wearing.
   c. TESTING DURING QUARANTINE: When local testing capacity and supplies allow, testing is recommended for all close contacts of confirmed or probable COVID-19 patients. Except for fully vaccinated, this testing should be done immediately or as soon as possible to help guide additional contact tracing. If symptoms develop after a negative test in that setting, consider retesting for COVID-19 as well as testing for another illness such as influenza. Testing in fully vaccinated is covered in the next paragraph (2.d.iii).
   d. RETURN TO WORK (RTW) AFTER EXPOSURE/QUARANTINE:
      i. EXPOSURE: exposure is defined as *close contact* with an individual with active COVID-19 infection (proximity of within 6 feet for a minimum of 15 minutes over 24-hours).
      ii. UNVACCINATED: (1) quarantine for 14 days after last close contact; (2) monitor for symptoms (fever ≥100.4, cough, shortness of breath, or other symptoms per (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html); (3) minimize interaction with those in living quarters to reduce risk of spread. Quarantine may be shortened based on local public health authorities after day 10 without testing or day 7 following a negative test on day 5 or later.
      iii. VACCINATED: fully vaccinated personnel do not need to quarantine after close contact unless they have symptoms but should get tested 3-5 days after exposure and wear a mask indoors until their test result is negative. If testing is not available, fully vaccinated individuals should wear a mask for 14-days after exposure.
   e. RETURN TO WORK (RTW) AFTER INFECTION/ISOLATION: Per CDC recommendations and reinforced in reference (a), Service members (SM) with an uncomplicated course of symptomatic

COVID-19, may RTW when all criteria are met as follows: (1) at least 10 days have passed since symptom onset, (2) at least 24 hours have passed since resolution of fever without the use of fever reducing medication, and (3) improvement in other COVID-19 symptoms. Asymptomatic SMs in all units may RTW 10 days from positive test. For severe (hospitalized) cases, extend the duration of isolation so that RTW is no earlier than 20 days since symptom onset. Based on severity of illness, some personnel may require additional time to gradually return to exercise and full duty (see next section). This RTW standard is supported by current and emerging medical literature and preferred over repeat testing.

f. DUTY STATUS FOR COVID-19 POSITIVE AND RETURN TO DUTY: For those with positive COVID-19 testing or symptoms consistent with COVID-19, isolation and either light duty or convalescent leave is appropriate. Max convalescent leave is 30 days for non-pregnancy conditions. Guidance for exercise limitations, a gradual increase in exercise, plus return to duty and deployability can be found in the next section, "Post-COVID-19 General Return to Duty and Deployability" as well as in the sections on Aerospace and Undersea Medicine Return to Duty. Those with a complicated or prolonged course may require LIMDU assignment as addressed below. For RC, convalescent leave can only be used for Full Time Support (FTS). For non-FTS RC, consider Medical Evaluation or Medical Delay.

g. LIMDU ASSIGNMENT: Until able to perform intense exercise, light duty is appropriate. Clinical judgement and operational necessity should be used to assign LIMDU. If the SM is expected to recover within 30 days, as many COVID-19 cases will, light duty should be used unless operational necessity requires LIMDU assignment (e.g., to generate an "avail" to facilitate administrative back-fill of the critical operational position). LIMDU is authorized for non-deployable symptomatic periods lasting 30-to-60 days, recommended for 60-to-90 days, and required for > 90 days. However, in lieu of LIMDU, light duty can be approved for up to 90 days for conditions expected to resolve or stabilize within that time per reference (c). For RC, Temporary Not Physically Qualified (TNPQ) should be considered where LIMDU would apply to Active Component.

h. PERSISTENT POSITIVES/RETESTING: Despite symptomatic recovery, persistent positive tests have been observed weeks after illness resolves. There is no evidence of a replication-competent virus more than 10 days after onset of mild-to-moderate illness and individuals likely remain infectious no longer than 20 days after severe illness (i.e., hospitalized). Reinfection with SARS-CoV-2 within 90-days after onset of initial infection have been reported, but remain rare. Susceptibility to similar viruses has occurred at the 90-day mark. Retesting recommendations from the CDC (https://www.cdc.gov/coronavirus/2019-ncov/hcp/duration-isolation.html) are as follows:
    i. ASYMPTOMATIC: retesting is not recommended during the 90-day period from initial positive test or onset of symptoms.
    ii. SYMPTOMATIC: rule out alternative diagnoses (e.g., influenza), then consider evaluation for SARS-CoV-2 reinfection in consultation with public health emergency officer (PHEO), infectious disease (ID) physician, or infection control expert.
    iii. OPERATIONAL: if more conservative stances for repeat testing are sought, protocols should be developed in coordination with Navy Environmental Preventive Medicine Unit activities, ID physicians, or infection control experts.

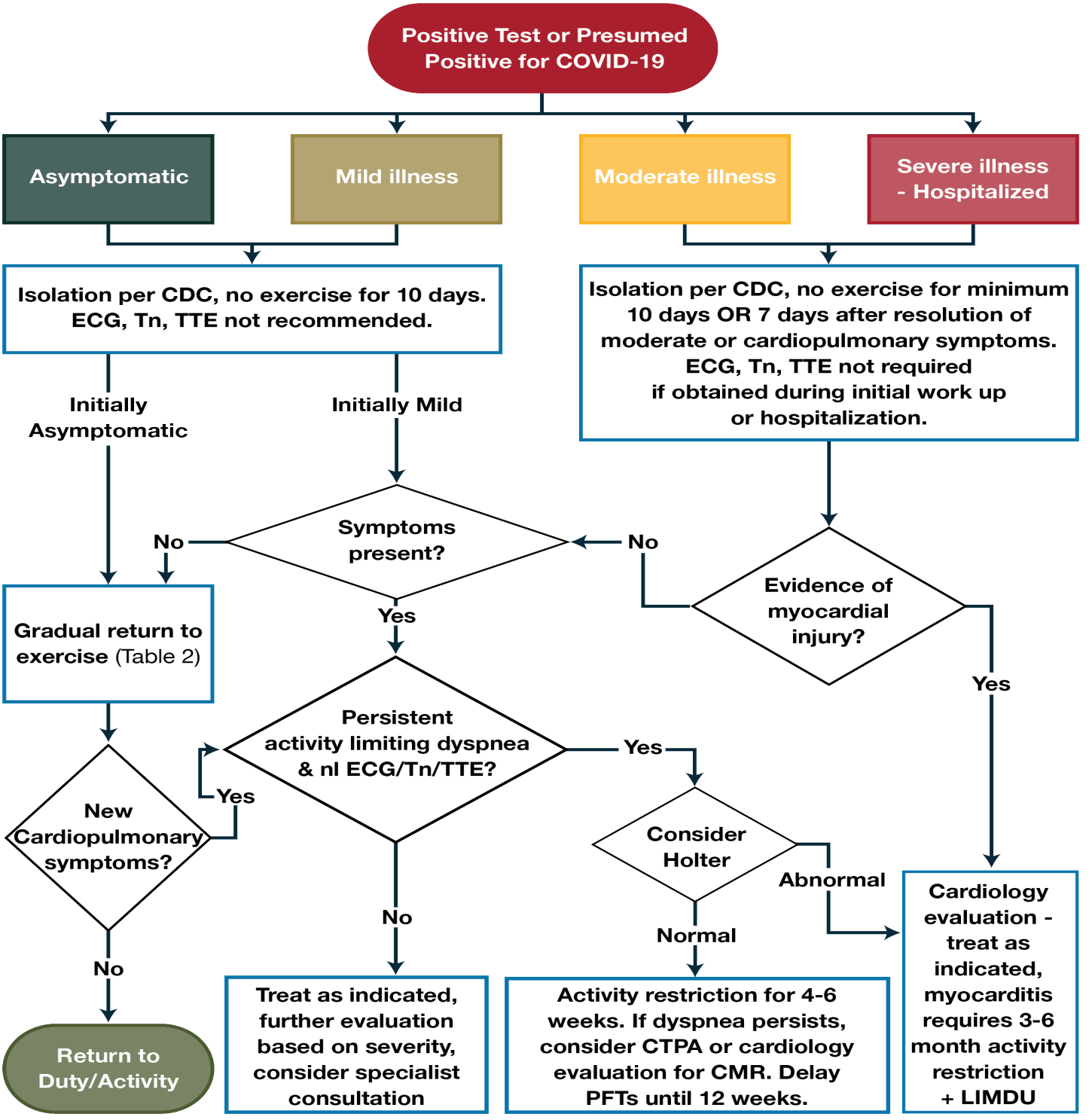
3. MEDICAL EXEMPTIONS FOR VACCINATION: For Sailors or Marines with a medical contraindication to COVID-19 vaccination, reference (g) outlines the process for medical providers to submit a medical exemption for approval by the first medical Flag Officer. Navy Medicine-specific clinical guidance and permanent medical exemption process map are available at https://esportal.med.navy.mil/bumed/rh/m3/M34/CRG/default.aspx.

POST-CORONAVIRUS 2019 (COVID-19) GENERAL RETURN TO DUTY AND DEPLOYABILITY CRITERIA:

SCREENING AND SPECIALIST CONSULTATION: RTW is outlined in reference (a) and the preceding section. The RTW duration is based on resolution of infectivity. RTD and deployability after a COVID-19 related complication should be based on persistence of symptoms and expected duty performance, with screening tests and expert consultation sought as needed based on treatment guidelines (e.g., pneumonia guidelines) and special duty requirements. It is recommended that Sailors and Marines receive a medical evaluation after moderate-to-severe COVID-19 infection prior to RTD to minimize impact to health, safety, and performance of duties. Those with initially asymptomatic or mild COVID-19 should report to medical if they develop moderate-to-severe symptoms. In COVID-19 infection, a viral pneumonia syndrome is common with severity rising with age and certain comorbidities. Current studies are mixed on the impact of myocarditis. Autopsy findings reveal myocarditis in 7.2%, but clinical correlation suggests the true prevalence of functionally significant myocarditis at autopsy is 1.4% compared to 0.5% before COVID-19. Macro or microvascular thrombi were significantly more prevalent at 47.8%, supporting the high frequency of thromboembolic events in those with COVID-19. The prevalence of myocarditis in cardiac magnetic resonance (CMR) imaging varies between studies, and there are challenges differentiating pathologic changes from exercise induced cardiac remodeling (the "athletic heart").

Current treatment guidelines are not all encompassing of the impact of COVID-19 and have been developed based on current understanding of the pathogenesis of COVID-19, expert opinion, and clinical observation. Until all-encompassing guidelines are available, the following RTD recommendations are provided. These recommendations do not replace clinical judgement. Special duty (e.g., flight/undersea) RTD considerations are addressed in following sections and references (d) and (e). Among other criteria, personnel should be able to perform intense exercise to RTD. Exercise during active infection may increase viral replication, and exercise with underlying organ involvement could result in injury. RTD and exercise recommendations are outlined below and in figure 1 and table 2. The footnotes provide key definitions and guidance on interpretation of recommended tests. Asynchronous telehealth for non-urgent cardiology consultation is available through the Global Teleconsultation Portal (GTP), at https://help.nmcp.med.navy.mil/path/user/ViewLogin.action or https://path.tamc.amedd.army.mil/path/user/ViewLogin.action.

The BUMED CRG algorithm addresses post-COVID-19 infection RTD. For post-vaccination associated myopericarditis, recommendations can be found in Defense Health Agency guidance (reference (h)). For individuals with post vaccination myocarditis, the DHA Immunization Healthcare Division should be notified (1-877-438-8222/DSN 761-4245, Option 1) and return to duty/exercise should be guided by consultation with a cardiologist.



ECG = Electrocardiogram	nl = Normal
CMR = Cardiac Magnetic Resonance Imaging	PFT = Pulmonary Function Test
CTPA = Computed Tomography Pulmonary Angiogram	Tn = Troponin
LIMDU = Temporary Limited Duty	TTE = Transthoracic Echocardiogram

Figure 1: Return to Duty/Activity Algorithm for COVID-19 Positive Patients

	STAGE 1	STAGE 2	STAGE 3	STAGE 3B	STAGE 4	STAGE 5
Activity Description	Minimum Rest Period	Light Activity	Light Moderate	Moderate Activity	Prolonged Moderate Activity	**Normal Training**
Exercise Allowed	Walking and Activities of Daily Living	Walking, light jogging (15 min/mile) for .5 - .75 mile. Stationary bike (60 rpm, 0-25 watts). No resistance training.	Jogging (12 min/mile) for 1 mile. Stationary bike (60 rpm, 25-50 watts). Low resistance training.	Slow run (10-15 min/mile) for 1.5 mile. Stationary bike (60 rpm, 50-125 watts). Moderate resistance training.	Run (10-12 min/mile) for 1.5-2.5 mile. Stationary bike (60 rpm, 150+ watts). Moderate to high resistance training.	**Normal Training Exercise Activities**
% Heart Rate MAX (220 - age)	N/A	<70%	<80%	<80%	<80%	**Normal Training**
Duration	N/A	<15 min	<30 min	<45 min	<60 min	**Normal Training Duration**
Objective	Allow time for recovery. Protect cardiorespiratory system	Gradual Increase in HR	Increase load gradually. Manage post viral fatigue syndrome.	Exercise coordination and skills.	Restore confidence and assess functional skills.	**Resume standard fitness routine.**
NUMBER OF DAYS IN EACH STAGE BASED ON SEVERITY						
Asymptomatic	10 days of activity restriction from (+) test. Consider exercise prescription.	1 day minimum	1 day minimum	1 day minimum	N/A	**Earliest Day 13**
Mild Severity Symptoms Nausea vomiting, diarrhea, anosmia or ageusia, nasal congestion, self-limiting fatigue.	10 days of activity restriction from initial symptoms. Exercise prescription is reasonable.	1 day minimum	1 day minimum	1 day minimum	1 day minimum	**Earliest Day 14**
Moderate Severity Symptoms Persistent fever >100.4, persistent myalgias, severe fatigue, hypoxia or pneumonia, and/or chest pain not associated with cough,activity limiting dyspnea, orthopnea, palpitations, syncope. Persistent is defined as at least 7 days of symptoms duration.	10 days minimum of activity restriction including 7 days after resolution of moderate or cardiopulmonary symptoms.	2 days minimum	2 days minimum	2 days minimum	2 days minimum	**Earliest Day 18**
High Severity Symptoms Requiring hospitalization for medical treatment and respiratory support (supplemental oxygen or above).	10 days minimum of activity restriction including 7 days after resolution of moderate or cardiopulmonary symptoms.	5 days minimum	5 days minimum	5 days minimum	5 days minimum	**Earliest Day 30**
Monitoring	Persistence of symptoms.	**New onset or recurrence of moderate or cardiopulmonary symptoms during return to exercise prescription require cessation of activity and further cardiac evaluation.**				

Table 2: Gradual Return to Physical Activity and Exercise Prescription (Adapted from: Elliot N., et al. Br J Sports Med 2020)

a. ASYMPTOMATIC COVID-19 infection:

1) Privileged provider defined per reference (d) or Independent Duty Corpsman (IDC)[i] counsels SM on the principles of required isolation (based on RTW guidance), exercise limitations, and to monitor for symptoms.
2) SM has completed 10-day isolation with exercise limitations.
3) Exercise limitation (no more than brisk walking) is recommended for a minimum of 10 days after positive test with a gradual increase in exercise, permitting resumption of intense exercise no earlier than day 13. Consider use of the exercise prescription in Table 2.
4) Recommend return to exercise and full physical activity at earliest 13 days after positive test AND upon meeting DoD Force Health Protection Guidelines Criteria for Redeployment.
5) **Electrocardiogram (ECG), Troponin I or High Sensitivity Troponin (HsTn), and Transthoracic echocardiogram (TTE) are not required for asymptomatic infection**.
6) Consider an exercise prescription (Table 2) to gradually re-acclimatize to activity.
7) Repeat medical evaluation is only necessary with development of moderate symptoms or cardiopulmonary symptoms (see paragraph c).
8) Personnel in Initial Entry Training (IET, first 180-days), such as enlisted recruit training or Officer Candidate School: local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, other testing as determined appropriate). For OCS, no separate commission waiver review through BUMED is required if commission date is >28 days from time of completion of quarantine and return to exercise clearance.
9) Education programs leading to a superseding commission, such as U.S. Naval Academy (USNA), Reserve Officer Training Corps (ROTC) and U.S. Merchant Marine Academy (USMMA): local determination of screening requirements for pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as deemed appropriate). No separate waiver review through BUMED is required if commissioning date is >28 days from time of completion of quarantine and return to exercise. Command may request BUMED review of records for return to military training clearance if no local military provider is available.

b. MILDLY SYMPTOMATIC COVID-19 infection:

1) Defined as symptoms of nausea, vomiting, diarrhea, nasal congestion, anosmia, ageusia, or a non-persistent (less than 7 days) fever, myalgia or fatigue.
2) SM has completed a minimum of 10 days of activity restriction.
3) For persistent symptoms (except for anosmia, ageusia, or nasal congestion), obtain clinical evaluation by privileged provider or IDC[i]. Low risk findings:
    i. Clinical exam without clinically significant abnormal findings and normal vital signs.
    ii. Absence of any cardiopulmonary symptoms (chest pain not associated with cough, activity limiting dyspnea, orthopnea, palpitations, syncope) at time of exam or reported during disease course.
    iii. Confirmation of no exercise limitations or treatment needed.
    iv. If moderate symptoms develop, complete evaluation outlined in paragraph (c) below.
4) **ECG, Troponin I or HsTn, and TTE are not required for mildly symptomatic infection.**
5) An exercise prescription (Table 2) is reasonable to gradually re-acclimatize to activity. If moderate COVID-19 symptoms or cardiopulmonary symptoms develop, SM should cease physical activity and undergo a repeat evaluation.
6) Recommend return to exercise and full physical activity at earliest 14 days after symptoms AND upon meeting DoD Force Health Protection Guidelines Criteria for Redeployment.

7) IET local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as determined appropriate). For OCS, no separate commission waiver review through BUMED is required if commission date is >28 days from time of completion of quarantine and return to exercise clearance.
8) USNA/ROTC/USMMA: local determination of screening requirements for pre-participation clearance (e.g., ECG, labs, clinical exam, other testing as OCS determines appropriate). No separate waiver review through BUMED is required if commissioning date is >28 days from time of completion of quarantine and return to exercise. Command may request BUMED review of records for return to military training clearance if no local military provider is available.

c. MODERATELY SYMPTOMATIC COVID-19 infection:

1) Defined as symptoms of persistent fever (at least 100.4), persistent myalgias, persistent fatigue (persistent defined as at least 7 days in duration), hypoxia (prolonged oxygen saturation ≤ 92% on room air), pneumonia, or cardiopulmonary symptoms (defined as chest pain not associated with cough, activity limiting dyspnea, orthopnea, palpitations, syncope).
2) SM has completed the longer of a minimum of 10 days of activity restriction OR 7 days after resolution of moderate COVID-19 symptoms or cardiopulmonary symptoms.
3) In the presence of moderate COVID-19 symptoms or cardiopulmonary symptoms, the following triad of tests are recommended to assess for return to duty.
    i. 12 lead ECG[ii]
    ii. Cardiac biomarkers (order of preference: highly sensitive Troponin, Troponin (I or T), then creatine kinase MB (CK-MB) – note: recommend send out of HsTn[iii]
    iii. Transthoracic echocardiogram (TTE)[iv]
4) Privileged provider or IDC[i] has determined SM is low risk based on:
    iv. Clinical exam without clinically significant abnormal findings (normal oxygen saturation (>92%) on ambient air, stable vital signs, absence of fever)
    v. Absence or resolution of severe or cardiopulmonary symptoms AND:
        1. ECG without clinically significant abnormalities[ii]
        2. No evidence of myocardial injury by cardiac biomarkers[iii]
    vi. No abnormalities on TTE[iv]
    vii. Confirmation of no further treatment needed.
5) An exercise prescription (Table 2) is recommended to gradually re-acclimatize to activity. If moderate COVID-19 symptoms or cardiopulmonary symptoms return, the SM should cease physical activity and undergo a repeat evaluation.
6) Recommend return to exercise and full physical activity at earliest 18 days after symptoms AND upon meeting DoD Force Health Protection Guidelines Criteria for Redeployment
7) If evaluation demonstrates evidence of myocardial injury, follow recommendations for symptomatic COVID-19 infection with myocardial injury.
8) IET: local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as determined appropriate). For OCS, a continuation waiver review is required, submission should include all records pertaining to evaluation, treatment, and medical clearance, as well as subject's personal statement describing LOA following exercise clearance.
9) USNA/ROTC/USMMA: local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as determined appropriate). For NROTC, continuation waiver review is required, submission should include all records pertaining to evaluation, treatment, and medical clearance, as well as subject's personal statement describing LOA following exercise clearance.

d. SEVERELY SYMPTOMATIC COVID-19 infection:

1) Defined as any COVID-19 infection requiring hospitalization for medical treatment or respiratory support (supplemental oxygen or above)
2) SM has completed the longer of a minimum of 10 days of activity restriction OR 7 days after resolution of moderate COVID-19 symptoms or cardiopulmonary symptoms.
3) In the presence of severe or cardiopulmonary symptoms, the following triad of tests are recommended prior to return to duty
    i. 12 lead ECG[ii]
    ii. Troponin I or HsTn[iii]
    iii. TTE[iv]
4) Pulmonary consultation is recommended 2-4 weeks after discharge for respiratory failure[v]
5) Privileged provider has determined SM is low risk based on:
    i. Clinical exam without clinically significant abnormal findings (normal oxygen saturation (>92%) on ambient air, stable vital signs, absence of fever)
    ii. Absence or resolution of severe or cardiopulmonary symptoms AND:
        1. ECG without clinically significant abnormalities[ii]
        2. No evidence of myocardial injury by cardiac biomarkers[iii]
        3. No abnormalities on TTE[iv]
    iii. Confirmation of no further treatment needed.
6) An exercise prescription (Table 2) is recommended to gradually re-acclimatize to activity and should cease physical activity and undergo a repeat evaluation with recurrence or development of any cardiopulmonary symptoms.
7) Recommend return to exercise and full physical activity at earliest 30 days after symptoms AND upon meeting DoD Force Health Protection Guidelines Criteria for Redeployment.
8) If evaluation demonstrates evidence of myocardial injury[ii, iii, iv], follow recommendations for symptomatic COVID-19 infection with myocardial injury (paragraph (e) below).
9) IET: local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as determined appropriate). Continuation or commission waiver required, submission should include all records pertaining to evaluation, treatment, and medical clearance, as well as subject's personal statement describing LOA following exercise clearance.
10) USNA/ROTC/USMMA: local determination of screening requirements for continuation and pre-participation clearance (e.g., ECG, labs, clinical exam, or other testing as determined appropriate). Continuation or commission waiver required, submission should include all records pertaining to evaluation, treatment, and medical clearance, as well as a personal statement describing LOA following exercise clearance.

e. MODERATE OR SEVERELY SYMPTOMATIC COVID-19 INFECTION WITH MYOCARDIAL INJURY:

1) Defined as a clinical course with cardiopulmonary findings suggestive of myocardial injury (presence of chest pain not associated with cough, activity limiting dyspnea, orthopnea, palpitations, syncope, or signs of heart failure) in the presence of abnormal ECG, abnormal cardiac biomarkers, or abnormal TTE.
2) SM has been cleared to return from isolation in accordance with local public health guidance.
3) **Cardiology Consultation for further evaluation to confirm diagnosis, determine if further cardiac MRI or other evaluation is warranted and if myocarditis/myopericarditis criteria is met.**

4) Pulmonary consultation is recommended 2-4 weeks after discharge for respiratory failure[v]
5) **Activity restriction for 3-6 months if diagnosis of myocarditis/myopericarditis is made by cardiologist. Place on LIMDU status.**
6) Recommended to complete the following evaluation before return to exercise and physical activity (by Cardiologist):
    i. 12 lead ECG[ii]
    ii. Troponin I or HsTn[iii]
    iii. Natriuretic peptide (BNP or NT-pro BNP)
    iv. Other supplemental studies to show resolution of COVID sequela and demonstrate normalization of end organ function (i.e. CXR, ESR, CRP).
    v. Transthoracic Echocardiogram (after completion of activity restriction)[iv]
    vi. Ambulatory cardiac event monitoring
    vii. Cardiac MRI with T1, T2 mapping and late gadolinium enhancement (LGE).
    viii. Graded Exercise stress test after completion of the tests above if no abnormalities and asymptomatic.
    ix. **Cardiology evaluation to ensure safe return to exercise**.
7) SM should receive an exercise prescription to gradually re-acclimatize to activity based on high severity symptoms categorization after being cleared to resume exercise by a cardiologist in the presence of low risk findings. SM should undergo a repeat evaluation with recurrence of any symptoms.
8) IET: All myocarditis or myopericarditis will require retention or commission waiver review. Waivers considered on a case-by-case basis, but will likely unfavorable for retention waiver, as unlikely to resume training if in a recruit or OCS cycle. If retention waiver not approved, return home (DES referrals where appropriate). May reapply through formal channels after resolution of any complications (e.g., resolved myocarditis with normalized left ventricular ejection fraction).
9) USNA/ROTC/USMMA: All myocarditis or myopericarditis will require continuation or commission waiver review. Waivers will be considered on a case-by-case basis.

f. SYMPTOMATIC COVID-19 infection complicated by stroke, venous thromboembolism, respiratory failure[v], myocardial infarction, cardiac failure, renal failure, other end-organ failure:

1) RTD based on expert consultation and case-by-case consideration for LIMDU with goal of retention vs. referral to DES for Active Component or Line of Duty or Medical Retention Review for RC.
2) IET: All require retention or commission waiver review. Waivers considered on a case-by-case basis, but will likely unfavorable for retention waiver, as unlikely to resume training if in a recruit or OCS cycle. If retention waiver not approved, return home (DES referrals where appropriate). May reapply through formal channels after resolution of any complications (e.g., resolved myocarditis with normalized left ventricular ejection fraction).
3) USNA/ROTC/USMMA: All require continuation or commission waiver review. Waivers will be considered on a case-by-case basis.

g. PERSISTENT DYSPNEA:

1) Clinical recovery from COVID may take 3-6 weeks for moderate-to-severe illness. Prolonged pulmonary symptoms are common after pneumonia.
2) If persistent dyspnea is present and no cardiac injury is evident on initial triad testing (ECG, biomarkers, echo), continue exercise limitations and reassess 4-6 weeks after symptom onset (ambulatory) or discharge (inpatient).

3) Consider ambulatory cardiac rhythm monitoring during this period of continued exercise limitations, particularly if palpitations or syncope are present.
4) At 4-6 weeks, consider specialist consultation for additional testing.
    i. Cardiology consultation may recommend cardiac magnetic resonance imaging (CMR) to assess for myocarditis. CMR should only be obtained in consultation with cardiology.
    ii. Pulmonary consultation may recommend computed tomography pulmonary angiogram (CTPA) for pulmonary embolus. Pulmonary guidelines recommend delaying pulmonary function testing until 12-weeks, permitting time to recover from pneumonia.

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[i] IDC in consultation with privileged provider based on scope of practice and clinical competency.

[ii] ECG findings that may indicate viral-induced myocardial injury include: pathological Q waves, ST segment depression, (new) diffuse ST segment elevation, and T-wave inversion that are outside of normal parameters per the "International recommendations for electrocardiographic interpretation in athletes (Sharma, et. al.)." If these abnormalities are found on EKG, consider cardiology consultation.

[iii] Cardiac Biomarkers indicative of myocardial injury: >99th percent upper limit of normal levels for Troponin or High Sensitivity Troponin I/ T. NOTE: current literature only addresses HsTn testing for myocarditis. The troponin ordered as part of a regular cardiac panel may not include an HsTn. If HsTn is not available, use standard troponin or consider CK-MB (in order of preference). If biomarkers indicate myocardial injury, obtain cardiology consultation.

[iv] Transthoracic echocardiogram findings of cardiac injury – regional wall motion abnormalities, dilated ventricles, or abnormal systolic function with reduced EF <45%.

[v] Respiratory failure is defined as acute hypoxemic respiratory failure requiring advanced support to include high-flow nasal cannula, non-invasive positive pressure ventilation (NIPPV), invasive mechanical ventilation, or extracorporeal life support.

Aerospace Medicine Sub-Community

COVID-19 Return to Flight Duty Status Guideline for Aerospace Medicine

a) COVID-19 Return to Flight Duty Status Guideline for Aerospace Medicine is a supplement to the US Navy Respiratory Guide starting after page 8 and is available at: https://med.navy.afpims.mil/Portals/62/Documents/NMFSC/NMOTC/NAMI/ARWG/Waiver%20Guide/15_Respiratory_210811.pdf?ver=Qey_QPlI3NbSziVujiiPPw%3d%3d

b) Includes information on the following:
   i. Return to Flight Duty Status Protocols
   ii. Suggestions on Testing & Specialty Consults
   iii. Clinical Criteria for Case Definition
   iv. Laboratory Criteria
   v. Medical Evaluation and ECG
   vi. Pulmonary Function Tests
   vii. Peak Flow Meter Screening
   viii. Exercise Tolerance Tests
   ix. NAMI Submission

Undersea Medicine Sub-Community

COVID-19 Return to Dive Duty Status BUMED Guidance for Undersea Medicine

a) Return to Dive Duty Status Guideline is available at: https://esportal.med.navy.mil/bumed/rh/m3/M34/CRG/default.aspx

b) Includes information on the following:
   i. Return to Dive Duty Status Protocol
   ii. Suggestions on Testing & Specialty Consults
   iii. Clinical Criteria for Case Definition
   iv. Laboratory Criteria
   v. Medical Evaluation and ECG
   vi. PFT and Exercise Screening Test
   vii. Exercise Screening Test