

Novel Coronavirus (COVID-19) – Guidance for Diving Contractors

Updated May 2021

This Information Note supersedes IMCA Information Note 1551 Rev. 2 which is withdrawn. The document has been prepared by IMCA Diving Division Members and members of the Diving Medical Advisory Committee (DMAC). It is also fully endorsed by the Working Committee of the International Diving Industry Forum (IDIF).

1 BACKGROUND

The novel Coronavirus disease (COVID-19) is a respiratory illness that can spread from person to person. It was first identified during an outbreak in Wuhan, China in December 2019 and has since spread worldwide. In 2020 COVID-19 was declared a pandemic by the World Health Organisation (WHO) and multiple cases have been confirmed in the offshore community. There is currently no curative treatment for the disease. Despite the advent of COVID-19 vaccination programmes in a number of countries, it is very important that the suite of protective measures outlined in these guidelines is observed for the foreseeable future.

The best way to protect against infection is to avoid being exposed to the virus that causes COVID-19.

A person who has had no symptoms of COVID-19 for 14 consecutive days, has had no contact with infected people and has maintained social distancing during that period, is considered likely to be COVID-19 free.

The aims of this Information Note are to:

1. Offer guidance to diving contractors on preventing the spread of the virus; and
2. Give considered advice on how to respond to suspected cases of COVID-19 among offshore commercial diving teams (surface supplied and saturation).

How COVID-19 spreads

When someone who has COVID-19 coughs or exhales, they release droplets of infected fluid. Most of these droplets fall on nearby surfaces and objects – such as desks, tables or telephones. People can catch COVID-19 by touching contaminated surfaces or objects and then touching their eyes, nose or mouth. If standing close to a person with COVID-19, others can catch it by breathing in droplets coughed out or exhaled by that person. Maintaining a distance of at least 1 metre to other people will reduce the risk of infection. Poor ventilation, especially in enclosed spaces, increases the risk of transmission.

Symptoms

Most persons infected with COVID-19 experience mild symptoms and recover. The symptoms may include:

- Fever or chills;
- A dry cough;
- Shortness of breath or difficulty breathing;
- Fatigue;
- Muscle or body aches;

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- Headache;
- New loss of taste or smell;
- Sore throat;
- Congestion or runny nose;
- Nausea or vomiting;
- Diarrhoea.

However, some go on to experience more serious illness and may require hospital care. Risk of serious illness rises with age. People with weakened immune systems and people with conditions such as diabetes, heart and lung disease are also more vulnerable to serious illness.

2 PREVENTIVE MEASURES

The key measure to prevent divers (especially in saturation) from acquiring COVID-19 is to prevent the virus from getting onto the diving operation. This is a difficult task, but the more a company can do, the less likely the possibility of a COVID-19 infection on-board.

Travel

The COVID-19 pandemic continues, and new variants have now been detected worldwide. In order to protect personnel and business continuity, contractors are advised to screen personnel 14 days before mobilisation to identify higher risk individuals.

The World Health Organisation (WHO) COVID-19 Weekly Epidemiological Updates provide an overview of the global, regional and country-level COVID-19 cases and deaths, highlighting key data and trends; as well as other pertinent epidemiological information concerning the COVID-19 pandemic. The WHO COVID-19 Weekly Operational Update reports on WHO and partners' actions in response to the pandemic. Both are available at the following web address:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>

It is important that personnel involved in any diving operations understand the issues involved with COVID-19 and, most importantly, how to protect themselves and others. Some very good advice which is kept up to date is issued on the WHO website and this should be 'issued' to all involved personnel 14 days prior to any mobilisation, or earlier if possible:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

Companies must also follow local and national guidance and regulations on the issues as these will vary around the globe and will change as the situation develops. Be aware that local regulations may mandate quarantine periods or even total travel bans.

Screening

Companies should do all they can to prevent the COVID-19 virus being taken onto a diving project, and particularly onto a saturation diving project. This may entail consideration of some enhanced screening prior to the personnel deploying.

There are various scenarios for the pre-deployment and embarkation process to minimise the possibility of getting the virus onto the vessel or platform, with some of the typical processes noted below:

- Crew sent this Information Note (including the pre-deployment questionnaire) prior to mobilisation from home.

- Crew asked to complete the pre-deployment questionnaire prior to travel, and any suspected cases informed not to travel.
- Crew transferred to hotel and isolated for a defined period of days prior to mobilisation to vessel.
- Where testing is not available it is recommended that 14 days of strict hotel isolation is observed.
- Where testing is available, it is recommended that 12 days of self-isolation at home followed by a minimum of 2 days strict hotel isolation prior to testing is observed.
- Where possible the crew are tested for COVID-19 and remain in isolation at hotel until results are received.
- Crew checked for symptoms prior to traveling to vessel on pre-arranged transport.
- COVID-19 free crew travel to vessel on pre-arranged transport.
- Vessel crew (including surface divers and topside diving support personnel) complete pre-embarkation check sheet.
- Saturation divers complete pre-sat medicals before leaving the hotel.

The questionnaire in Appendix 1 is an example of a pre-deployment screening tool. If possible, a Pre-Deployment Questionnaire of this sort should be completed by crew members 14 days before the planned date of mobilisation from home. Typically, symptoms become apparent within 5 days of initial infection. The incubation period is up to 14 days, so it is prudent to review all personnel travel and health issues during this time period before mobilisation from home.

Note: it is important that the contractor has access to suitable medical expertise that can assess the questionnaire in the event of a positive response to any of the questions.

Just prior to departure from the isolating hotel or upon arrival at the embarkation point (helicopter terminal or port), contractors may also wish to provide personnel with key information on COVID-19 and implement pre-embarkation checks. An example of a COVID-19 Pre-Embarkation Information Sheet is included in Appendix 2. An example of a COVID-19 Pre-Embarkation Check Sheet is included in Appendix 3.

Note: it is important once again that the contractor has access to suitable medical expertise that can assess the questionnaire in the event of a positive response to any of the questions.

Testing of Personnel

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus that causes coronavirus disease 2019 (COVID-19). In some regions, test kits are available to detect evidence of the virus in samples of swabs taken from the oral cavity and/or nostrils. There are two different types of swab test available to detect SARS-CoV-2 virus. One tests for the presence of viral genetic material e.g. by using the PCR (polymerase chain reaction) method. The other tests for the presence of proteins on the surface of the virus (antigens) to ascertain the presence of the pathogen.

It is important to seek expert advice on the timing of such tests, the sampling technique, and the interpretation of the results. There are periods in the infective process when the virus is not detectable and so results may appear negative even though the virus is multiplying i.e. false negative results may be obtained. The PCR test is the most sensitive swab test method currently available.

Lateral flow antigen testing has been found to be useful by some marine contractors in situations where personnel are displaying flu-like symptoms offshore. However, the low sensitivity of this test method is known to generate many false-negative results, and so lateral flow antigen testing may need to be supplemented by further confirmatory testing using other more sensitive methods e.g. PCR testing.

Another test that may be offered is a serological test in which small samples of blood are tested for the presence of antibodies in the blood. Extreme caution should be exercised in interpreting results from such tests. The kits available to date have not proved reliable and may indicate false negatives, especially in the first 14 days of infection. We do not recommend serological testing as a screening tool at this time.

In the event of a positive test result confirming the presence of the virus, the affected individual must not be deployed offshore.

A negative result does not mean that there is no viral infection. Given the risk of false negative test results, it is emphasised that a negative test does not mean that other controls can be relaxed.

More detailed information on testing for novel coronavirus appears in Appendix 4.

3 GENERAL PRECAUTIONS AT WORK

- Consider closing down communal areas such as gyms, cinemas, saunas etc. If this is not possible, enhanced cleaning regimes should be introduced in these areas.
- Regularly clean surfaces (e.g. desks and tables) and objects (e.g. doorknobs, handles, handrails, telephones, keyboards etc.) with appropriate disinfectant.
- Maximise the fresh air in interior spaces. Doors and windows may be opened where it is safe to do so. Adequate ventilation reduces how much virus is in the air. It helps reduce the risk from aerosol transmission, when someone breathes in small airborne particles (aerosols) after a person with the virus has been in the same enclosed area. The risk of virus transmission is greater in areas that are poorly ventilated.
- Promote regular and thorough handwashing by employees, contractors and customers as per WHO guidance (https://www.who.int/gpsc/clean_hands_protection/en/).
- Put sanitising hand rub dispensers in prominent places around the workplace. Make sure these dispensers are regularly refilled.
- Display posters promoting handwashing and the technique required.
- Where possible maintain a distance of at least one metre between individuals.
- In situations where a one metre distance cannot be maintained, the wearing of face masks should be considered.
- Ensure that suitable face masks are available at your workplaces. The use of face masks is increasingly being shown to be useful in preventing the spread of infection, especially in enclosed spaces where social distancing is not possible (see the WHO guidance document *Mask use in the context of COVID-19*).
- Ensure that paper tissues are available at your workplaces for those who develop a runny nose or cough at work, along with closed bins for hygienic disposal.
- Coughs and sneezes should be caught in a handkerchief and the handkerchief binned as soon as possible, followed by handwashing or sanitising. Use your sleeve if a handkerchief is not available.
- Avoid touching your face.

4 PRE-SAT HEALTH EXAMINATION AND EXCLUSION OF SUSCEPTIBLE INDIVIDUALS

As a part of a standard pre-sat health examination before the divers go into saturation, it is recommended that the divers are asked again about any symptoms of infection. Due to the nature of the COVID-19 infection the examination must always include temperature measurement and auscultation of lungs.

Morbidity and mortality of Covid-19 is higher in patients with increasing age and comorbidities. It is advised to pay special attention to divers with pre-existing medical conditions (especially cardio-vascular disease and hypertension) and carefully consider whether these divers should be mobilised during the pandemic. Research indicates that the likelihood of severe complications arising from Covid-19, such as pulmonary failure, increases with age and particularly in persons older than 60 years. Vaccination significantly reduces the severity of the illness.

5 DIVING SPECIFIC PRECAUTIONS

Dive planning and system segregation

Dive team planning should look at system segregation for new teams entering saturation if the system layout facilitates this. The new teams should be assigned the use of a TUP and SDC to reduce cross contamination with the teams who are already in saturation.

Disinfection and hygiene procedures should be reviewed and approved by the contractor's specialist diving medical advisers.

Choosing Sanitising Liquids

In general, the sanitiser recommended by the equipment manufacturer should be used for diving equipment. The selection of sanitiser for chamber disinfection should be decided in co-operation with the Diving Medical Adviser. The final decision may be a difficult balance of disinfection efficacy, toxicological profile, offgassing properties and corrosive or other deteriorating effects on the equipment. However, this general advice can be given:

- Dirty surfaces should initially be cleaned with a neutral detergent.
- Select a sanitiser tested for efficacy against Coronavirus or approved by the relevant national public health authority. In the absence of such approval, the sanitiser should be tested against standard EN 16777:2018 or EN-14476:2013+A2:2019. Rely+On Virkon® and Chemgene HLD4H® are two such products, commonly used in saturation, meeting these requirements.
- The sanitiser needs sufficient contact time to reliably disinfect the surface. While 1-2 minutes is sufficient for 75% ethanol (letting ethanol film dry out at room temperature), a sanitiser like Rely+On Virkon® and Chemgene HLD4H® will require 10 minutes contact time to work efficiently. Adhere to the manufacturers' instructions to ensure sufficient contact time.

Cleaning and Disinfection of Saturation Diving Equipment

It is common practice to share diving helmets among the dive team. It may be possible to issue each diver with his own oral-nasal mask and to fit it prior to his lock-out. However, the microphone and nose clearing pad would need to be changed too. If this is not practical, the oral nasal mask, the microphone, nose block and the expiratory part of the demand regulator should be sanitised after each use by applying approved cleaning agent, covering with a clean cloth and allowing sufficient soak time, in accordance with the manufacturers' requirements, before rinsing with fresh water. Consideration should be given to locking out the hats that have been used at the end of each bell run to be cleaned by the technicians and replaced with hats that have been cleaned. Personal neck dams and hat liners are preferred. All neck dams and hat liners should be sanitised between uses.

Additional diligence is required for divers' rebreathers due to the self-contained breathing loop, and operational procedures must be put in place to minimise cross contamination. If the diver has activated the rebreather with the hat on, then the rebreather must be locked out and cleaned in accordance with the manufacturer's guidelines. If the rebreather checks are done with the helmet off in the SDC then the cleaning protocol for the oral nasals should be applied, with consideration given to extending the mouthpiece during the soak period.

Helmet/face mask manufacturers should also be consulted for their cleaning and disinfection guidelines, but checks should be made to ensure that the disinfectants that will be employed are in line with the recommendations above.

It is recommended that any tissues or cloths used to clean oral nasals and helmet interiors within the bell are collected in a plastic bag to be locked out of the system at the end of the bell run.

It may be appropriate to reinforce the cleaning regimes within saturation diving systems in excess of those described in DMAC 26, which recommends twice weekly cleaning of the chambers as a minimum. It is suggested that table surfaces, medical locks, bunk rails and door handles within the sat chambers are cleaned at least three

times a day using a suitable sanitiser. Cloths should only be used once and then discarded in plastic bags to be sent out through the medical lock. Records of cleaning activities should be logged and retained.

Pre-sat briefings and toolbox talks must emphasise the need for cleanliness, good personnel hygiene and early reporting of any symptoms (however minor).

Hand washing and information posters may be laminated and posted inside the sat system.

Hygiene Considerations

In order to prevent the COVID-19 virus entering the saturation chamber the full support chain of the vessel/site has to be fully involved to maintain the strict hygiene requirements. This is necessary to prevent contamination of the food and materials required for the diving personnel. It is not just the Life Support Crew who are the handlers of supplies to the divers. These considerations will also help to protect the rest of the topside support crews.

All personnel in supporting roles, including galley personnel and Life Support crews, should adhere to good hand washing and respiratory hygiene to avoid the risk of passing any potential viruses into the chamber. Hand sanitiser should be available at the equipment and medical locks and applied before handling objects to be locked into the chamber.

Dive Technicians who are involved in the assembly and servicing of diving helmets are advised to do the same.

The virus has a lipid envelope (fat membrane) surrounding it which is destroyed by detergent. This means hand washing is a very effective control of the virus picked up from touching contaminated surfaces. >60% alcohol gel hand sanitiser is also an effective control but is not available for use in saturation. Correct hand washing technique is the prime control to prevent contamination.

Medical personnel working with COVID-19 cases use the following personal protective equipment (PPE):

- Apron;
- Medical gloves;
- Appropriate mask (FFP 2 or better);
- Eye shield.

For saturation support use, where the Life Support team personnel are not in direct contact with patients and no coughing/sneezing is local to the handling area, safety spectacles are considered to be suitable eye protection rather than a full eye shield.

Personnel handling items emanating from a chamber containing an infected patient, either through routine medical lock or other chamber operations, will also require the apron, medical gloves and mask. Good hygiene precautions are also necessary in disposing of any food waste, food containers, and in handling cutlery etc. until fully washed with detergent, preferably in a dish washer.

Laundry items which are or may be contaminated should be cleaned by standard machine washing at 60°C or above using normal washing detergent. This should kill the virus and no special washing criteria are required to further sanitise the laundry. The divers' laundry does not need to be isolated and washed separately.

Handling of the items should be carried out using the PPE described above.

Diving Plant Considerations

Environmental Control Units (ECUs) – Condensate from the environmental control system should not pose a COVID-19 infection risk. Nevertheless, measures should be in place to collect it in a container, avoiding splashes, spray or aerosol.

During the period of the pandemic, until the high risk of the viral infection has passed, saturation chamber systems should be operated as isolated units insofar as is possible. The aim is to prevent spread of the virus throughout the entire system if the virus were to be introduced. This includes separating chamber ECUs where practicable.

Reclaim Systems – Whilst the coronavirus is not considered to be air transmittable and should not be carried through a diver or chamber gas reclaim system, it is recommended that gas reclaim systems are not utilised without a secondary barrier provided by a filtration system.

Some diver gas and chamber reclaim system manufacturers' systems do provide filtration to entrap particles to a size of 0.01 microns. The Coronavirus is approximately 0.05 – 0.20 microns in size and should be retained within the filter. It is important therefore to verify the nature of the filters in any reclaim system and ensure the manufacturers' recommendations on replacements are followed. If filtration is inadequate, open circuit should be adopted and chamber gas vented to atmosphere in a safe location.

Cleaning and Disinfection of Surface Diving Equipment

Surface supply operations should follow the same regime as described above on the work site to clean helmets and masks. Particular attention should be given to the cleaning and disinfection of the chamber and BIBS masks in SurDO2 operations and following any treatment within a DDC. For surface diving operations, ethanol >75% may be used as a sanitiser on dry and clean surfaces (e.g. oral-nasals, tables). 1-2 min contact time is sufficient for effective disinfection. Let the surface dry out or rinse the equipment in water if it is necessary to take it back to use immediately. The configuration of the BIBS and any BA sets should be examined, and a cleaning/disinfection routine established and documented. Consider using a sanitiser as described for saturation diving.

6 SUSPECTED CASES OF COVID-19

The standard response to a suspected case of COVID-19 is to isolate the patient and minimise contact with potentially unaffected personnel. Effective isolation within a saturation system may be dependent on the size and configuration of the sat system. A diver cannot be isolated alone in a chamber. He must have another diver with him, or possibly two, depending on team sizes. Isolation should be implemented at the first signs of symptoms and maintained until a diagnosis is forthcoming.

The saturation environment has significant challenges for isolation and treatment of a patient. The patient's close contacts must all be considered to be at risk and isolated to the maximum practicable extent. The patient should use a medical mask whenever possible to prevent further dispersion of infected droplets within the chamber system. In addition, the patient should not use communal facilities, such as the wet lock and table, at the same time as his teammates. These communal facilities should be cleaned and disinfected prior to and after the patient's use.

'Isolation' means that the patient and his teammates are in a separate chamber from the other saturation divers, with either a dogged door which will prevent droplet transfer, or preferably a negative pressure differential against the adjacent chamber (the patient chamber need only be 2-3 m shallower). This will mean any gas transfer is into the isolated chamber rather than out of it. The isolated chamber should also be served by a dedicated environmental control system.

It is acknowledged that in some cases it may not be possible to isolate as described above due to limited system size or configuration. In this case, affected divers should be allocated bunks as far from the other divers as possible and strict hygiene measures implemented to minimise contact between the divers. This isolation advice should also be followed for non-symptomatic divers with a suspected or confirmed COVID-19 case.

The Diving Contractor and his Diving Medical Adviser, together with Diving Superintendent and Medic, should develop a contingency plan prior to the commencement of operations to identify:

- Isolation possibilities and operational capabilities specific to the configuration of the dive system;

- Arrangements for transportation to appropriate destinations e.g. to ports with access to suitable medical facilities for critical COVID-19 patients. Such facilities should include Intensive Care Units (ICU).

Definitive diagnosis of a COVID-19 case requires laboratory testing of samples swabbed from suspected individuals. Issuing and subsequent testing of sample kits is normally co-ordinated through the medical systems of local regulatory authorities. Contractors should determine what arrangements are in place in their region of operations.

As the only way to make a positive diagnosis is through testing and analyses, this should be done where possible.

If testing is not an option, likely cases based on signs and symptoms should be treated as positive cases requiring isolation and referred to the company Diving Medical Advisers for review, advice and support. The Diving Medical Adviser will determine if the patient should be decompressed.

COVID-19 cases have developed with complications requiring significant medical support in a period of 5 days after first onset. It is therefore likely such a diagnosis will include a requirement for decompression. Consideration should be given to limiting the saturation storage depth to allow normal decompression within a 5-day time period.

No medication (including non-prescription medication) is to be administered without specific instructions from the Diving Medical Adviser.

Suitable arrangements must be in place to continue isolation after surfacing and during any subsequent treatment.

Following decompression, the chamber must be deep cleaned and disinfected with appropriate cleaning products. BIBS must be removed, cleaned and disinfected (including the exterior of the supply and dump hoses). Loose equipment and chamber furnishings should be removed, cleaned and disinfected separately. Personnel performing the cleaning and disinfection must wear appropriate PPE.

If diving beyond a 5-day decompression or mixing of teams is unavoidable consider implementing the following measures:

- Carry out isolation and testing of the diving personnel as set out in section 2;
- Consider limiting the divers to those who have been vaccinated as the vaccine provides very good protection against severe COVID-19 and the diver is unlikely to develop severe symptoms even during the lengthened decompression times;
- Implement an ongoing test regime where each diver is tested every 48 hours from commencement of saturation until start of decompression.

An ongoing Covid-19 surveillance regime will improve the likelihood of detecting the virus as early as possible which may be several days before symptoms are present.

It will assist in picking up:

- Any earlier false negative results;
- Infected personnel with long incubation periods which did not show at the PCR test;
- Any infection introduced to the divers from another external source.

It is envisaged that Antigen testing will be used for this ongoing surveillance due to the simplicity and cost of such tests. The use of higher sensitivity detection machines will provide improved detection, but the repeated nature of the testing will, to an extent, offset the less sensitive detection rates of simpler test kits.

As discussed elsewhere in this document, all current SARS-Cov-2 virus tests are subject to a degree of false negatives but much fewer false positives. Any positive test result carried out should be acted upon, but for tests not carried out at a test centre, the first action may be to repeat the test to rule out false positives. A second positive test would confirm the positive result. A negative test requires a third test to decide on best of three.

Research shows that the reliability of any swab tests are influenced by the way the swab is taken. Swabs taken by a trained assistant rather than self-administered provide more reliable results and any swabs taken by divers in saturation should, where possible, be carried out by an assisting DMT.

If swabs are planned, all DMTs should have training or refresher training on the correct way to carry out a swab from a medical professional prior to going into saturation.

The correctly labelled swabs in unsealed tubes may be locked out of the chamber for further processing.

7 VACCINATION PROGRAMMES AND THE NEED TO CONTINUE FOLLOWING THE PROTECTIVE MEASURES OUTLINED IN THESE GUIDELINES

The COVID-19 vaccine may not prevent infection but it has been proven significantly to reduce the severity of the illness, lower hospital admissions, and decrease mortality. If a diver develops the illness in an environment and situation that limits medical care (e.g. in saturation), it is obvious that the less severe the condition, the better is the likelihood of a positive outcome. It is therefore recommended that divers have the vaccine when it becomes available to them.

IMCA recommends using only government supplied COVID-19 vaccines and only vaccines that appear on the World Health Organization's (WHO) Emergency Use List (EUL). See the IMCA news release *Vaccinating Seafarers* reproduced as Appendix 5 in this document.

COVID-19 vaccine is protective for **most** people, but the effect on transmissibility of the disease is variable depending on the vaccine and the strain of virus. It is therefore emphasised that vaccination is not a complete solution in itself and is only supplementary to other controls. Despite the advent of COVID-19 vaccination programmes in a number of countries, it is very important that the suite of protective measures outlined in these guidelines continue to be observed for the foreseeable future.

As with any vaccine, individuals may feel unwell following injection of COVID-19 vaccine. It is recommended that personnel should not go to work until they are fully recovered from any post-vaccination symptoms.

8 RISK ASSESSMENT AND THE DEVELOPMENT OF SAFE WORKING PROCEDURES

During the COVID-19 pandemic, it is essential that appropriate measures are identified and put in place to minimise the risk of harm from the novel coronavirus to all persons taking part in company diving projects. Diving contractors should ensure that the COVID-19 risk control measures they introduce are properly proceduralised and risk assessed prior to the commencement of diving operations.

COVID-19 – An Example of a Risk Assessment Undertaken by an IMCA Diving Contractor (IMCA D 16-20) contains a sample of a robust risk assessment recently undertaken by an IMCA Member. The Bow-tie risk assessment methodology was selected in this example. It was used to help the company identify and implement appropriate measures for preventing the occurrence of contagious disease (COVID-19) amongst dive team on a DSV. It was also employed to identify suitable control and recovery measures should cases nevertheless occur.

Used in conjunction with the guidelines in this document, the Bow-tie risk assessment approach was found by our Member to be one effective way of developing appropriate company procedures and safeguards to reduce the risk of COVID-19 disease on its diving projects so far as reasonably practicable.

9 CONCLUSION

COVID-19 poses a serious risk to the diving population. The nature of the work means close contact is unavoidable and offshore diving projects are normally conducted in remote areas without easy access to medical facilities. The

most effective way to minimise the impact of COVID-19 is by preventing the virus arriving at the work site through rigorous pre-mobilisation and pre-embarkation screening and excluding individuals who may have been exposed to the virus.

The diving population tends to be in generally good health. If the virus affects the diving workforce, in most cases it should not develop into serious illness. Nevertheless, a case of airway infection in a saturation chamber is likely to necessitate decompression, abortion of the operation and the vessel going to shore. It is essential therefore that all possible measures are taken to minimise the introduction and spread of the virus.

The evolution of the virus and its spread is a dynamic situation and further guidance may be produced as more information on COVID-19 becomes available.

IMCA-published information on COVID-19 and further information from other relevant sources is posted on the following IMCA website page: <https://www.imca-int.com/covid-19/>.

10 FURTHER ESSENTIAL GUIDELINES RELATING TO COVID-19 FROM DMAC

1. *DMAC 33 Return to Diving after Covid-19* – This guidance covers the return to commercial offshore surface supplied and saturation diving after confirmed or suspected Covid-19. It also contains recommendations for the assessment of fitness for diving duties of asymptomatic offshore commercial divers during the ongoing Covid-19 pandemic.
2. *DMAC 34 Guidance for Medical Examiners of Divers Conducting Face-to-Face Medicals During the COVID-19 Pandemic* – This guidance document gives advice about how medical examination and assessment of commercial divers may be done adequately and with a low risk of transmission/infection during the Covid-19 pandemic.

Example of Pre-Deployment Questionnaire

1. Within the last 14 days, have you travelled to, through or from any countries other than the country of intended embarkation?

YES NO

If the answer IS "YES", list the countries here:

2. Have you had any close contact with a person who:

- ◆ has a confirmed COVID-19 infection?
- ◆ or is under investigation for COVID-19 infection?
- ◆ or has had any symptoms compatible with COVID 19 infection?

YES NO

3. Have you been self-isolating and practicing social/physical distancing during the last 2 weeks?

YES NO

N.B. It is important that you self-isolate and observe social distancing precautions to the best extent possible in the period up to your mobilisation. This includes the journey from home to the worksite.

4. Do you currently have? (check all that apply):

Fever Cough Sore Throat Shortness of Breath

Diarrhoea Loss of sense of taste and smell

5. Are you currently taking prescribed medication?

YES NO

6. Have you had a COVID-19 vaccination?

YES NO

If the answer IS "YES",

- Which vaccine did you receive [if known]?
- Did you complete the course? [Give number of injections you received].
- Give the dates of your last COVID-19 vaccine injection.

Name:

Date:

NOTE

It is important that the contractor has access to suitable medical expertise that can assess the questionnaire in the event of a positive response to any of the questions.

Up to date information on COVID-19 can be found on the World Health Organisation 's website:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

Example of COVID-19 Pre-Embarkation Information Sheet

The Coronavirus (COVID-19) Key facts

- COVID-19 may present severe symptoms that may prove to be fatal, particularly in those with underlying health issues such as asthma or other conditions with the respiratory system.
- There is currently no curative treatment for the COVID-19. However, safe and effective vaccines have been developed and as a result a number of countries have introduced COVID-19 national immunisation programmes.

Symptoms of COVID-19

Current known symptoms of COVID-19 include:

- Fever or chills;
- A dry 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;
- Diarrhoea.

Symptoms usually develop within 2 to 14 days. During this time the virus can be spread to others. It is spread through ingestion, inhalation. The virus also survives and lives on surfaces and objects.

How to protect yourself and others

- Avoid large groups of people.
- Avoid those displaying any symptoms of COVID-19.
- Where possible maintain a distance of at least one metre between individuals.
- In situations where a one metre distance cannot be maintained, wear a face mask.
- Self-isolate yourself and communicate your actions to the Vessel Master.
- Catch your coughs and sneezes in a towel or tissue, then dispose of it and wash your hands.
- Wash your hands as the **PRIMARY** method of hygiene for at least 20 seconds with soap and warm water, as per WHO guidelines
https://www.who.int/gpsc/clean_hands_protection/en/.
- Dry your hands with a single use towel.
- Use alcohol sanitiser gels as a **SECONDARY** means of hygiene, **NOT** in place of hand washing.
- Monitor trusted news sources for up to date information.

Contact the Medic **IMMEDIATELY** if you experience any COVID-19 like symptoms described above.

Example of COVID-19 Pre-Embarkation Check Sheet

COVID-19 Screening Questionnaire: General Information			Completed by Medic	Completed by Crew Member
Name:		Company:		
Travelled from (<i>country / UK location</i>):		Travelled with anyone? Who?		
Travelled through (<i>country</i>):		Mode of transport		
Date of Arrival in in this country		Country of Residence:		
Have you been able to self-isolate in the last 14 days?				
COVID-19 Screening Questionnaire: Medical Information			Completed by Medic	Completed by Person
Body Temperature:		Any visual signs of illness:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Describe symptoms:				
Do you currently have, or have you had in the last 14 days, any of following symptoms?			Comments / Observations	
Fever	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Cough	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Body Aches	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Sore Throat	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Diarrhoea	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Nausea / Vomiting	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Shortness of Breath	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Fatigue	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Loss of sense of taste / smell	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Any unexplained illness	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Have you ever been to a healthcare facility where confirmed or suspected cases of COVID-19 were being treated?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have you ever been in contact with a confirmed or suspected case of COVID-19?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have you had a COVID-19 vaccination?			Yes <input type="checkbox"/>	No <input type="checkbox"/>

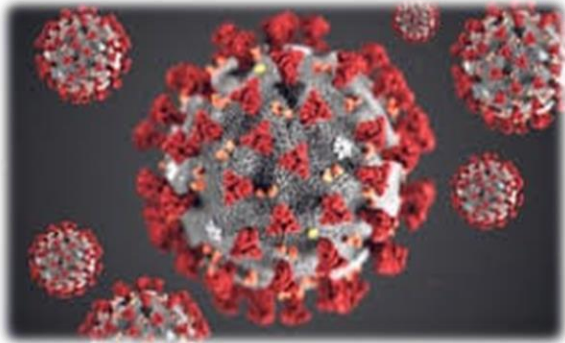
Please note, that you have a duty of care and obligation to yourself and others who you may knowingly, or unknowingly infect with COVID-19. It is therefore vital that this questionnaire is completed with factual and honest information regarding your health.

Examiner	Examinee
Medic Name: _____	Name: _____
Medic Signature: _____	Signature: _____
Date: _____	Date: _____

NOTE

It is important that the contractor has access to suitable medical expertise that can assess the questionnaire in the event of a positive response to any of the questions.

TESTING FOR COVID-19 / CURRENT FACTS



The availability of testing equipment has increased dramatically since the early days of the pandemic. Small portable equipment is now available at an affordable price.

If done correctly, testing can provide confidence to employees and clients and may help to protect business continuity. Despite the reliability and sophistication of the testing machines available, it is extremely important to understand that the test itself is a “snapshot”. The test may detect the presence of the virus at a certain stage of infection but may fail to detect its presence in the early or late phases of infection. Furthermore, no test is 100% accurate all the time and false results may be produced on occasions.

There are several common methods available for testing for coronavirus.

Collection of samples for testing and the performance of the test can be performed by personnel who have received the relevant training from the equipment supplier or medic who has been trained by the equipment supplier or his agent.



There are two different types of swab test available to detect SARS-CoV-2 virus:

1. The first type of swab test detects genetic material from within the virus.
 - RT-PCR (reverse transcription polymerase chain reaction) test method. This requires swabs to be taken from the back of the throat and from the nasopharyngeal area towards the back of the nostrils. This test method detects the presence of the genetic material in the virus and is the most sensitive of the test methods. The test protocol requires careful sample preparation and the test procedure takes 30 minutes per sample in a portable “point of care” machine. The RT-PCR test is the preferred and most sensitive method of those commonly available.
 - LAMP (Loop modified isothermal amplification) test method. This is a similar process to RT-PCR testing but produces many more viral RNA copies at a constant temperature instead of the heating and cooling cycles required in the RT-PCR test process. This means that samples are processed faster.
2. The second type of swab test uses rapid antigen (lateral flow) technology to detect proteins (antigens) that are present when a person has COVID-19.
 - FIA (fluorescent immunoassay) lateral flow test method. This requires swabs to be taken from the nasopharyngeal area towards the back of the nostrils. This test method indicates the presence of nucleoproteins from the virus by combining them with antibodies to form antigen¹ / antibody² particles

¹ Antigens are molecules capable of stimulating an immune response.

² Antibodies are proteins produced by the immune system in response to exposure to antigens. They bind to antigens to help eliminate them from the body.

which fluoresce. The intensity of the fluorescent light generated is measured within the test equipment and indicates the viral load. The test protocol is quite simple and it takes 30 minutes to process a sample in a portable “point of care” machine.

- Chromatographic immunoassay lateral flow test method. This test permits rapid qualitative detection of specific antigens of the virus. It requires swabs to be taken from the nasopharyngeal area towards the back of the nostrils. Sample preparation is simple, and the result is displayed within 20-30 minutes. No machine is needed to process the samples so a series of samples can be collected and processed rapidly. This test method is not nearly as sensitive as the other methods and may need confirmatory testing by RT-PCR or FIA.

A very important factor when testing is the effectiveness of the swabbing. If at all possible, “self-swabbing” should be avoided. The unpleasant nature of the process means that an individual rarely performs the procedure properly. It is far better to have the swabbing performed by a trained medic or technician.

To be of any real use, testing should be performed after a minimum of 2- 3 days of strict isolation (this means NO contact with other people) and personnel should remain in strict isolation after being swabbed until the test results become available. An individual who tests positive MUST NOT go offshore. A negative result should not be assumed to confirm there is no virus present.

Testing of an individual who has previously tested positive and / or suffered from COVID-19 but is now recovered and symptom-free is of little use. Traces of dead, non-viable viral material may still be detected even though the individual poses a low risk of infecting others. The highly sensitive RT-PCR test may detect “dead” viral material.

There is a type of test available which analyses small samples of blood for the presence of antibodies. This is the serological test method.



Antibodies are manufactured in the body as part of its defence mechanisms against foreign “invaders” such as bacteria and viruses.

Antibodies need time to be produced and to “learn” the nature of the invader. This process can take days and may not be particularly effective when the virus multiplies at a rapid rate.

To date, none of the serological test kits commercially available have proved reliable and IMCA is not aware of any serological test kits that have been accredited by reputable authorities. The number of false negative results is alarming. A negative result may actually be wrong but give a false sense of security with a subsequent relaxation of the recommended preventative measures (handwashing, social distancing etc.). A positive result does not reveal whether an individual has the disease or has had the disease and has recovered.

IN SUMMARY:

- Routine testing may be of use, especially if it is by the PCR method.
- The testing must be preceded by days of strict isolation and the isolation must be maintained until the results are known.
- In the event of a positive result confirming the presence of the virus, the affected individual must not be deployed offshore.
- A negative result does not mean that there is no viral infection. Given the risk of false negative test results, it is emphasised that a negative test does not mean that other controls can be relaxed.
- Personnel may be asymptomatic but still be infected and so may spread the virus.
- Currently, serological testing is of little use.

The most effective measures we can deploy are those currently in use:

- Extensive pre-mobilisation screening.
- Identification of high-risk individuals.
- Pre-embarkation checks.
- Social distancing and the wearing of face masks.
- Hand washing and the use of sanitisers.
- Increased level of cleaning onboard.
- Temperature checks.
- Increase in awareness and obligations to self and other crew members.
- Drills and contingency planning.
- Close liaison with company Medical Advisers and their review of company procedures and testing policies.

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Vaccinating Seafarers

Published on 12 April 2021

The shipping industry[1] is once again collaborating to ensure that seafarers are protected against the COVID-19 disease.

A Vaccinations Task Force is developing best practice guidance in order to:

- Ensure a pragmatic approach is taken by Governments to seafarer inoculations;
- Develop guidelines setting out all the steps necessary to implement a vaccination programme for seafarers; and
- Address the legal liabilities for shipowners arising from vaccinations.

The principles adopted recognise that:

1. Seafarers have been recognised by UN bodies as ‘key workers’ and, as such, countries should vaccinate seafarers at the earliest possible opportunity;
2. Seafarers should be encouraged to be vaccinated when offered the opportunity;
3. Only vaccines on the WHO’s Emergency Use List (EUL) should be used; and
4. Vaccinated seafarers should be provided with internationally accepted documentation containing standard information that can be used to verify the vaccination.

The shipping industry has worked with the relevant UN bodies and made representations to the COVAX scheme[2], particularly since most seafarers come from countries eligible for vaccines through that scheme. Similarly the shipping industry have approached the pharmaceutical industry for access to vaccines for seafarers.

Multiple UN agencies including the WHO and IMO have confirmed that currently vaccines are not available for purchase by a private entity unless a State agency is directly involved. It is noted that some public private partnerships have been established notably in the Philippines, however, these are also run by State agencies.

Many ship owners and managers have reported that they have been approached by private entities offering to provide vaccines to seafarers. The industry group would caution against the use of privately obtained vaccines as their legitimacy and efficacy may be questionable.



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The shipping industry group remains committed to ensuring that seafarers are properly vaccinated using WHO EUL approved vaccines provided by appropriate State agencies. It is hoped that private vaccinations will be available in most countries soon. Industry organisations will continue to lobby for the vaccination of seafarers at the earliest point.

Footnotes

[1] This note has been developed by ICS, BIMCO, CLIA, ECSA, ICMA, IMCA, IMEC, IMHA, INTERCARGO, InterManager, INTERTANKO, ISOA, ITF and WSC.

[2] COVID-19 Vaccines Global Access, abbreviated as COVAX, is a global initiative aimed at equitable access to COVID-19 vaccines led by UNICEF, Gavi, WHO, CEPI, and others.