Medical care during the COVID-19 pandemic

8. information for the offshore wind industry from the WINDEAcare® network
14 October 2020

In terms of the effects of the COVID-19 pandemic on the offshore wind industry, the summer was rather inconspicuous - compared to the expectations or fears we had at the beginning of the pandemic. The comprehensive hygiene measures and other preventive strategies have successfully prevented a massive outbreak in the offshore wind industry. Service operations could be maintained with high reliability.

If suspicious cases arose offshore, solutions adapted to the situation were always found in order to keep the risk low for all parties involved. The various jointly developed strategies of risk-adjusted isolation, on-site testing and, if necessary, evacuation have proven their usefulness in many cases. The individual processes were subject to continuous optimization.

Now autumn is coming - the number of infections is rising again across Europe, including in Germany. It is currently impossible to predict where this development will lead and what effects it will have on the offshore wind industry in general.

It is positive that knowledge about the virus and the effectiveness of preventive measures have now progressed further. Many initially unclear points such as the benefit of everyday masks, distance control and good ventilation due to the aerosol component are now undisputed in their importance. Also the test strategies are moving forward due to recent developments. There are new products on the market in this area, which we would like to evaluate here - with great caution.

1 New test options and their evaluation

The standard test for the diagnosis of COVID-19 disease is still the **PCR test**. This test detects (simplified) direct viral RNA and is currently the highest standard for diagnosing COVID-19. Due to its high accuracy it can and is also used for the screening of asymptomatic or pre-symptomatic patients.

This test can only be carried out in a laboratory and theoretically takes a few hours – for the pure laboratory process. However, with transport and process times, as well as with laboratory capacity that is not always available, 24 hours or more are often needed between laboratory acceptance and results.

In addition to this standard test, there are now a number of so-called rapid tests available on the market, whose differences and possible applications we would now like to present.

First of all, a **rapid PCR test** has also been available for some time. This is carried out in a laboratory device, which theoretically can be operated geographically independent of a laboratory. Due to the

higher acquisition and maintenance costs, this method has so far been more suitable for projects in the offshore wind industry in exceptional cases (e.g. with very high numbers of people on site). With this test, results for individual samples can be obtained in less than one hour or several samples can be evaluated simultaneously in a slightly longer time. This method is less suitable for real mass testing.

Antibody tests have been on the market for some time. These are also often referred to as rapid tests. However, it tests whether the immune system of an infected organism has produced certain "defence proteins" - i.e. antibodies. Regardless of the fact that there are a large number of test systems available that can be evaluated very differently, all of these test systems have in common that they are positive at best when the immune system has overcome the disease. Therefore, they make sense for scientific considerations such as the ongoing studies of the Robert Koch Institute (SeBluCo or the CORONA-MONITORING local). In no way do they prove that a person is *not infected* or even *infectious*. Neither can they say for certain that an infection has ever existed or that an infection has never existed. In addition, these tests have very different accuracies for "real" COVID-19 immune reactions as well as a wide range of possible errors. In summary: Antibody tests are not relevant for our considerations. The RKI chart shows the course of the disease over time and which tests can be positive and when.

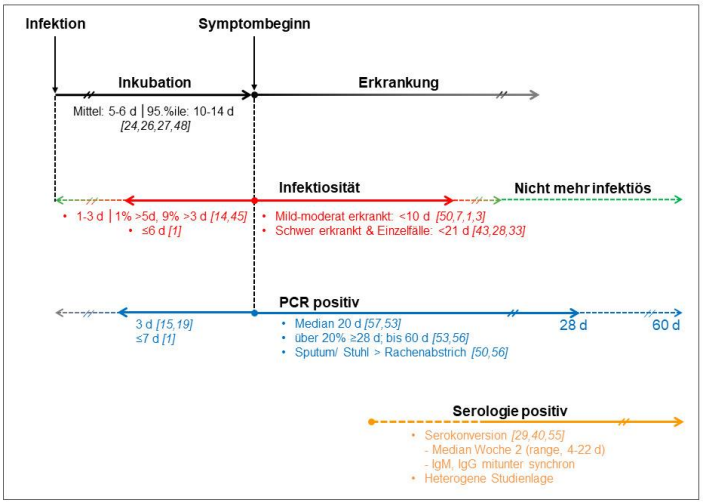

Figure 1: Course of the disease over time | Source: Robert Koch-Institut

New are now the **antigen tests**. These are available from various manufacturers and they only differ in detail. What they all have in common is that they are real *point-of-care rapid tests*. They can be carried out technically on site without laboratory equipment. Samples are taken by trained personnel in a similar way to the swab for a PCR test.

Here a direct virus protein is detected. These tests can be positive in the same time window of an infection as the PCR tests, but they are not quite as sensitive. The information provided by manufacturers on sensitivity varies and ranges from just over 93% to over 97%. The sensitivity indicates the percentage of people who become positive. These tests can be false-negative, especially in people with a low viral load. This basically also applies to PCR tests, but these are better in direct comparison.

Some of these antigen tests are only approved for symptomatic patients, while others are also approved for asymptomatic or pre-symptomatic patients for risk stratification. Due to the lower sensitivity compared to classical PCR tests, the antigen tests are not suitable to exclude a COVID-19 diagnosis (and should, if positive, be confirmed by a PCR test). Officially ordered PCR tests, e.g. when entering the country from a risk area, cannot currently be replaced by antigen tests.

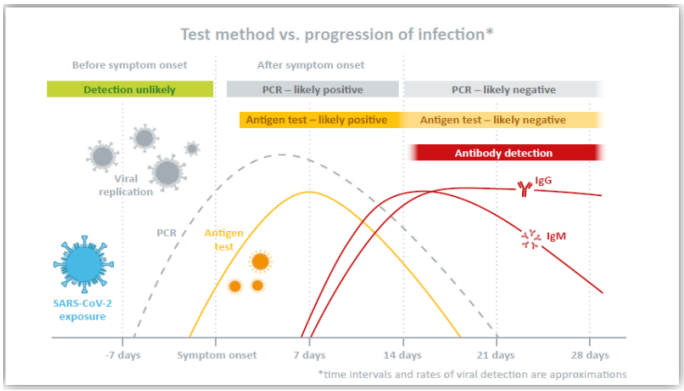

Figure 2: Antigen tests bridges the gap | Source: Fa. Nadal vM GmbH

We are currently evaluating the antigen tests to be very well suited for the primary purpose of:

- to relieve patients with rather classic cold symptoms without risk of infection with SARS-CoV-2 (i.e. no contact with infected persons, no travel history, etc.) with a high degree of certainty from the suspicion of COVID-19 infection
- to carry out risk stratification in patients with suspected COVID-19 (contact history and / or multiple typical symptoms).

One can safely say: If the antigen test is positive, an infection with COVID-19 is highly probable and (!) the patient has a high risk of infection. The test cannot say that a person is not infected.

However, it can give a very good approximation of whether a person is infectious for the environment. This can be used in the processes in offshore projects on vessels and platforms.

2 Updated SOP on deployment tactics and outlook on test strategies

We have integrated the antigen tests into the updated treatment algorithms for our emergency paramedics of Johanniter-Unfall-Hilfe e.V. (JUH), even if not all scientific and operational questions have been completely answered.

We assume, however, that especially in autumn with a general accumulation of colds, pragmatic strategies will have to be developed in order to meet both safety and health aspects and at the same time to maintain a regular service operation in your projects.

The antigen tests - like the PCR tests - depend on the pre-analytics (i.e. also the correct acceptance technique) and may only be carried out by appropriately trained medical personnel. Other techniques of sample collection (saliva, throat solutions, etc.) are not (yet) relevant.

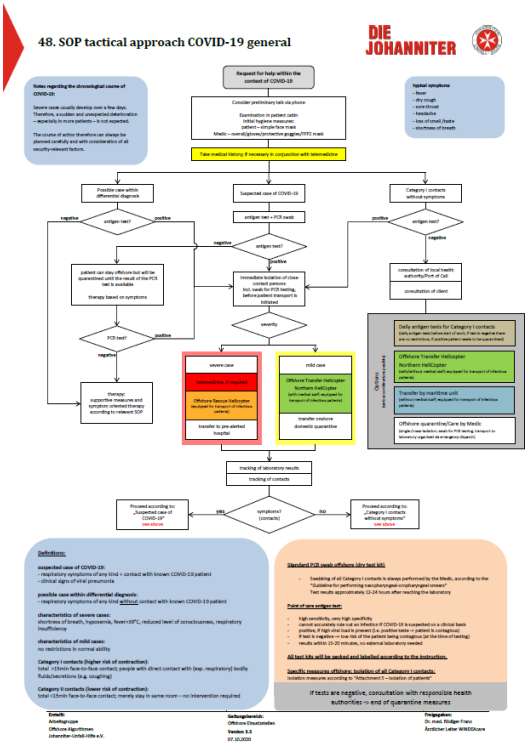

Figure 3: Deployment tactic | Source: JUH

According to our current state of knowledge, a strategy of using these antigen tests in the series testing of offshore personnel before their shifts start could also be very promising and contribute significantly to minimizing the risks for the personnel. Concepts that implement this idea are currently being developed with customers and must of course be continuously evaluated.

3 Air transport of persons with suspected infection

The air transport of persons with - proven or only suspected - SARS-CoV-2 infection is a challenge like all infection transports in helicopters. As already described earlier, the rescue helicopters as well as the transport helicopters of Northern Helicopter GmbH are structurally equipped for this purpose and specially prepared for these transports in terms of personnel and special procedures. Thus, for example, the winch process of potentially infected persons can be carried out with a low risk for the deployed personnel.

The photo shows an example of the equipped and certified separation between cockpit and patient room as one of the preventive measures in rescue helicopters.

This service is of course also available to the offshore wind industry if no comparable service is currently provided under an existing contractual relationship for air rescue and can be ordered at any time if necessary.

Figure 4: Corona Shield“, by Airbus ® | Source: NHC

4 Download of information

This letter as well as the previous information especially on the topic "Medicine and Corona Pandemic" can be viewed at any time in our download area of the WINDEAcare homepage.

Please note the dynamics of the situation. Not all of the statements we have created from the early days of the pandemic have to apply equally now:

https://www.windea-care.de/de/downloads

5 Newsletter and general information

Please officially register to receive the information letter by clicking on the link below:

https://www.windea-care.de/en/subscribe

Do not miss any information about medical care in the offshore wind industry.

The sending by e-mail will be stopped with the distribution of this statement. Thereafter, communication will only take place via the official newsletter. Please make sure that the email-address of the newsletter is approved accordingly and does not end up in the spam folder.

6 Mission control

All medical services from the WINDEAcare network can be obtained from the

EMERGENCY CONTROL CENTRE OFFSHORE WIND FARMS

the *Gesellschaft für maritimes Notfallmanagement mbH*, operated in cooperation with the *Johanniter-Unfall-Hilfe e.V.*:

E-Mail: rescue.offshore@johanniter.de

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