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Future Care Bulletin Covid-19 Number 11

Dear Future Care Clients,

Please review prior bulletins.

As of last night, there are **3,630,942** cases reported worldwide. I believe at least 10 times that many people have been infected. There have been **254,592** deaths. Clearly, worldwide, the numbers are accelerating.

Risk Factors

Risk factors for complications of Covid-19 include older age (*e.g.*, >65 years), cardiovascular disease, chronic lung disease, hypertension, diabetes, and obesity. It is still unclear whether certain other conditions (kidney disease, immunosuppression, cancer, and uncontrolled HIV infection) have an increased risk, but it is likely. Obesity in the US certainly seems to be a risk factor. While obesity itself is an epidemic in the US, even a greater percentage of Covid-19 patients are obese than even the percent of the general population.

All of these risk factors should be a consideration for owners, including significant obesity, in the selection of where and when to deploy crew.

Sample Collection for PCR

How to Obtain a Nasopharyngeal Swab

[https://www.nejm.org/doi/full/10.1056/NEJMvcm2010260?query=recirc mostViewed railB article](https://www.nejm.org/doi/full/10.1056/NEJMvcm2010260?query=recirc%20mostViewed%20railB%20article)



The Food and Drug Administration (FDA) recently recognized on-site **self-collection** of an anterior nares specimen as an acceptable method of collection; this option may promote home-based testing. This reduces exposures for health care workers but may increase false positives if not properly done.

Saliva and Sputum Collection

MicroGen DX has obtained FDA EUA Approval as of 4-23-20 listed under High Complexity Molecular-Based Laboratory Developed Tests as "Southwest Regional PCR Laboratory LLC. dba MicroGen DX that is approved for use and has been validated for nasal swabs, sputum, and saliva testing for SARS-CoV-2. Sputum, which is defined as saliva and mucus, has been shown to be equivalent to nasal swabs and in some studies superior to nasal swabs in the detection of SARS-COV-2.

Sputum and saliva collection cups are readily available. Nasal swabs have faced some shortages.

This may present of viable option for ship owners to arrange testing prior to boarding and absence of viral shedding in the convalescent crew member. Sputum and mucus from the lungs and nasopharynx should be as accurate or more accurate than nasopharyngeal swabs. Saliva alone may not be as accurate

TRANSMISSION

The virus is primarily spread from person to person through respiratory droplets released when an infected person – **symptomatic, or not** - coughs or sneezes. The likelihood of transmission is decreased if people remain at least 6 feet apart, although studies are now showing 12 feet is probably far better with 6 as an absolute minimum. Transmission is thought not to occur or be minimally transmissible through the inhalation of aerosols (virions suspended in air). However, there are concerns that the virus may be aerosolized during certain activities (e.g., singing) or procedures (e.g., intubation or the use of nebulizers) that doctors perform and that it may linger in aerosols for more than 3 hours in these circumstances. The virus may survive on cardboard, plastic, and stainless steel for days. Therefore, contamination of inanimate surfaces may play a role in transmission when someone touches a surface and then puts their contaminated hands to their face prior to washing.

A major challenge to containing the spread of the virus is that asymptomatic and presymptomatic people are infectious. This is the Achilles heel of our attempts to limit spread. Recent reports suggest that patients may be infectious 1 to 3 days before symptom onset and that up to 40 to 50% of cases may be attributable to transmission from asymptomatic or presymptomatic people. This was recently confirmed by the CDC after analyzing all released studies on this topic.

This is why we recommend all crew wear masks while working and socializing with other crew in addition to maintaining social distancing.

The below report demonstrates the difference in spread of virus from asymptomatic individuals with and without masks.

<https://www.cnn.com/videos/health/2020/05/04/cough-coronavirus-masks-kaye-pkg-vpx.cnn>

Just before or soon after symptom onset, patients likely have the highest nasopharyngeal viral levels the duration of infectious viral shedding is unclear. While 14 days is being used for return to work recommendation, it is likely 21 days is more accurate.

This is important, as shipowners will need to decide when to get nasopharyngeal swabs to clear crew for return to work. If done at 14 days, there may still be virus detectable – but we do not know what this means and whether well individuals who have had and recovered from the illness are still communicable if they have detectable virus in the nasopharynx. Testing at 21 days would further minimize this dilemma.

As testing becomes more widely available, shipowners should be able to test their entire crew simultaneously and if all crew are negative without risk factors, govern operations accordingly. This would fall under testing of asymptomatic individuals in congregate living situations.

Surface Survival

The survival of the virus on surfaces is a major topic of concern. It is important to recognize that the droplet method of transmission is the predominant and overwhelming mode of transmission. *The have been no definitive reports of transmission of virus from packages, cargo, home deliveries, etc. although caution is warranted. Crew should wear gloves when loading cargo and wash their hands thoroughly when done.*

Copper is the surface with the shortest period of survival, and this may lead to the increased use of copper alloys on high risk surfaces such as knobs in rest rooms, door handles, elevator buttons and handrails in the future. Cardboard can show survival of a day, stainless steel 2 days and plastic 3 days. However, the viral load drops quickly and by the end of the documented viral detection periods there is < 0.1% of the virus and we do not know how infectious those viral particles may be. Once the surface coat is disabled, the viral particle is no longer infectious.

We have previously discussed the importance of proper cleaning and sanitation and the difference between the two. Clean and disinfect surfaces that people come in contact with. These include tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks. Avoid touching high-contact surfaces in public.

Keeping surfaces sanitized, wearing gloves when appropriate, thorough hand washing and not touching your face minimize the risk of transmission in this manner allowing you to focus on respiratory droplet prevention.

Case Fatality Rates (CFR)

The CFR will drive public opinion and governmental action. The lower the CFR, the less likely people will want to disrupt economics to prevent viral transmission. The CFR's denominator—total cases—depends on how thoroughly a country tests its population. Its numerator—total deaths—depends on the spread of ages within that population, the prevalence of preexisting illnesses and risk factors such as smoking and obesity, access to care including how far people live from hospitals, and how well staffed and equipped those hospitals are. These factors vary among countries, states, and cities, and therefore, the CFR will, as well. As an example, we have really been looking at a CFR of 2-3% - higher in certain places, such as Italy. If 10x as many people have actually had the virus, then the CFR drops to 0.2%. How long do we keep the economy closed for that? Alternatively, if 100,000 million Americans ultimately get the virus, 0.2% equates to 200,000 deaths in the US alone.

Variability of Presentation

The variability of COVID-19 is extremely perplexing doctors. The disease effects not only lungs and airways, but also on hearts, blood vessels, kidneys, guts, and nervous systems. An article recently was published with a series of cases presenting as stroke in young patients with no prior risk factors. Certain unconventional therapies seem to work in some countries and populations and not in others. It's not clear if the virus is directly attacking these organs, if the damage stems from the generalized overreaction of the immune system, if some effects are the side effects of treatments, or prolonged stays on ventilators. In the next Bulletin I will update therapies.

A Few Important Recommendations and Considerations for Shipowners

- General hygiene guidance for crew pre-deployment and on board
- Increased deployment of hand sanitizers
- Clean and sanitize between voyages; crew mess; disembarked staterooms
- Gloves while moving cargo
- Education on mask and gloves – using and removal (donning and doffing)
- Universal use of face masks on board until cohort of crew together for 14 days without illness
- Increased par level for PPE; medication and supplies; crew prescription medication
- Manage guests; contractors; vendors and officials
- Continue social distancing during meals and other non-work activities
- Strategic planning for crew disembarkation at every stage of voyage (step ahead; what if protocols)
- Full crew turnover when possible
- Identify potential isolation cabins
- Strategic deployment of crew over 60 years of age, immunocompromised, and/ or with underlying medical conditions – especially diabetes; Syndrome X
- Mandatory flu vaccination next season
- Co-horting of exposed/recovered crew
- Utilize previously ill crew for necessary port activities (assumes no re-infection)
- One person on board with highest level medical certificate
- Distribute individuals with medical experience and certificates across the fleet
- **Maintain a close relationship with your telemedicine provider**

Thank you

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For additional information please contact physicians@futurecareinc.com. To refer a specific crewmember medical incident please continue to email our Contact Center at <firstresponse@futurecareinc.com> .