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April 6, 2020

Coronavirus Infection Update

Dear Future Care Clients,

Please review our prior bulletins – especially Nos. 6-8

As of the last bulletin there were 463,000 cases reported worldwide and 21,100 deaths. Now, as of April 4th – 8 days later, there are 1,192,028 (likely 10x as many) and 64,316 deaths.

- We have previously discussed the limitations of fever screening as less than 50% of patients have a fever early on. This statistic still holds, but eventually 90%+ have a fever.
- Clearly, being asymptomatic and carrying the virus is very concerning and is responsible for the current expanding number of cases in an exponential manner – especially in large cities with concentrated populations at high density. This is why social distancing is the only thing that will slow the virus. We have not even seen the virus enter the densely populated poorer areas of India and Brazil yet in any numbers.

Presentation of Illness:

These symptoms may appear 2-14 days after exposure

Most commonly:

- Fever
- Cough
- Shortness of breath

Loss of smell and alteration in taste is being reported

- At the hospital where I work the illness is being found when patients present for other problems and a chest x-ray is obtained or they are found with low oxygen saturation.
- The hospital has been also been encountering an increased number of cases of COVID-19 with atypical presentations (non-respiratory) such as malaise and fatigue or vomiting and diarrhea and we are maintaining a very high index of suspicion. Medical staff are literally assuming anyone presenting for any reason is infected.
- Many patients have very low oxygen concentrations in their blood yet they are not short of breath and are thinking clearly. This is very unusual and no one yet understands the physiology. They are calling this group of patients the “happy hypoxics”.

If a crewmember develops emergency warning signs for COVID-19 get medical attention immediately.

Emergency warning signs include*:

- **Trouble breathing**
- **Shortness of breath worsening with mild exertion**
- **Persistent pain or pressure in the chest**

- New confusion or inability to arouse
- Bluish lips or face

Release from home or cabin quarantine

A major issue under discussion is when people who have been ill and are better can go back to normal activity. How long do they shed virus and are they infectious just because they are shedding some virus? Patients may be infectious for 5-13 days after symptoms resolve.

Current CDC recommendations

Strategy based on no testing available or testing not used

Persons with COVID-19 who have symptoms and were directed to care for themselves at home may discontinue home isolation under the following conditions:

- 1) At least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath); **and**,
- 2) At least 7 days have passed since symptoms first appeared.

Test-based strategy - contingent on the availability of ample testing supplies and laboratory capacity as well as convenient access to testing.

Persons who have COVID-19 who have symptoms and were directed to care for themselves at home may discontinue home isolation under the following conditions:

- 1) Resolution of fever without the use of fever-reducing medications **and**
- 2) Improvement in respiratory symptoms (e.g., cough, shortness of breath) **and**
- 3) Negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥ 24 hours apart** (total of two negative specimens).

Asymptomatic

- Individuals with laboratory-confirmed COVID-19 who have not had any symptoms may discontinue home isolation when at least 7 days have passed since the date of their first positive COVID-19 diagnostic test and have had no subsequent illness.

This strategy can be used with crewmembers who test positive or are presumed positive while on board. The crewmember should be presumed to still have some chance of being infectious for another seven days and wear a facemask at all times when in public. Developments and strategy may change over the next few weeks as more people recover.

Masks

As the number of patients seen in hospitals with totally unrelated problems were found to be Covid-19 positive and as it became clear that asymptomatic individuals were likely responsible for increasing community transmission, it became clear that every single person you come in contact with should be considered to be Covid positive, including all clerks at stores and pharmacies and including **YOU !!** For this reason, it is now recommended that everywhere a surgical mask when going out in public and if not available, a homemade mask, scarf, bandanna or other cloth device covering your mouth and nose. Cotton is probably best.

Treatment

As promised, a brief update about treatment in this issue.

- Out-patient treatment remains supportive. Good diet, lots of rest, acetaminophen to keep the fever down (note: there were some early concerns with the use of ibuprofen causes worsening of the disease, but that has been largely debunked – so use ibuprofen if you prefer), avoid spread to other, stay hydrated but NOT overhydrated.
- *There are **NO** specific Covid-19 medications to recommend or take in patients well enough to be treated at home.*
- We are monitoring the effectiveness of hydroxychloroquine closely. So far, it is being used in patients requiring hospitalization and there are multiple studies under way to determine best timing, best dose, whether to use with an antibiotic called azithromycin and whether there is any role early in the illness, in asymptomatic individuals or prophylactically, If there are any specific developments I will include in future bulletins.

We have received numerous questions regarding supplements and vitamins.

THERE ARE NO SPECIFIC VITAMINS SUPPLEMENTS OR MINERALS THAT HAVE BEEN SHOWN TO BE SPECIFICALLY EFFECTIVE AGAINST COVID-19. We do not endorse any of these therapies and merely responding to requests for information.

I posted the question about evidence for any efficacy for these alternative treatments on a worldwide physician only COVID-19 site and I have had 2000+ views and only one response that was not useful. While getting essential vitamins and minerals from supplements and whole foods can help bolster your immune system, it's best to first take coronavirus-specific precautions, such as washing your hands regularly with soap and water for at least 20 seconds, not touching your face, covering your coughs and sneezes, and practicing physical distancing or physical isolation to prevent getting and spreading the virus.

SO, WITH THAT SAID:

Let's discuss some general principles. There are a number of vitamins and minerals that are necessary to support the immune system every day and making sure these are in your diet is important to your overall immunity and as such would be important should you be exposed to the virus as opposed to having a weakened immune system.

The U.S. National Institutes of Health (NIH) recommends the following daily doses of the above micronutrients for adults:

- Vitamin A: no more than 3,000 micrograms (mcg)
- Vitamin C: 75 milligrams (mg) for women; 90 mg for men – **do not exceed 2000 mg**
- Vitamin D: 600 international units (IU)
- Vitamin E: 15 mg
- Vitamin B2: 1.1 mg for women; 1.3 mg for men
- Vitamin B6: 1.3 mg
- Vitamin B12: 2.4 mcg
- Folic acid: 400 mcg of dietary folate equivalents
- Iron: 18 mg for women; 8 mg for men
- Selenium: 55 mcg
- Zinc: 8 mg for women; 11 mg for men - **do not exceed 150 mg daily**

A person needs enough, but not too much. The definitely safe level of most nutrients in a multivitamin or mineral supplement should be around 100 percent of the daily value. However, there are some

exceptions, according to Healthline. Taking high doses of vitamins A, D, and E can lead to long term complications such as irregular heartbeat, blood clotting interference, hemorrhages, and organ damage. Taking high doses of vitamins C, B6, and folic acid can lead to issues such as GI distress, nausea, heartburn, and may negatively impact your immune system.

Having a healthy diet is important in supporting our immune function and many nutrients influence the body's ability to fight infection.

There are a few supplements that have been specifically recommended to boost the immune system against coronavirus.

Vitamin C:

Several studies have shown that vitamin C before and soon after the onset of symptoms of upper respiratory tract infections, may help ease symptom burden and reduce the duration of illness. However, the available evidence does not support the notion that preventive vitamin C supplementation can reduce the risk of acquiring upper respiratory tract infections, Studies to date have not focused specifically on coronavirus infections. There have been studies of using intravenous (IV) vitamin C in very high doses in septic patient, and in Wuhan, in some critically ill Covid-19 patients. The data is inconclusive. Even if IV treatment is available and a crewmember opts to try it, use 500-1000 mg/day. Do not exceed 2000 mg per day.

Zinc Lozenges:

A review study updated in 2013 summarized 18 randomized controlled trials involving 1,781 participants across all age groups found that zinc – particularly in lozenge or syrup form – “inhibits replication of the virus” that cause the common cold and shortens average duration of the common cold when taken within 24 hours of onset of symptoms at a dose of more than 75 milligrams a day. It seems that it throws a wrench in the virus’s RNA-synthesis process. *However, using zinc lozenges as directed is no guarantee against being infected by the virus, even if it inhibits the viral replication in the nasopharynx.*

One recommendation is to completely dissolve in in your mouth one lozenge containing 18.75 mg of zinc acetate every two waking hours. Do not exceed 8 lozenges daily, and do not use for more than three consecutive days.

Selenium - selenium is usually plentiful in the American diet are breads, grains, meat, poultry, fish, and eggs. While necessary for the immune system, we do not consider the supplementation would have an incremental benefit and you can get too much. If you want to make sure – eat 2-3 Brazil nuts per day.

Lactoferrin – this is found in human and cow milk. There is very little evidence to support its role as an anti-viral.

There are polyphenols in **green tea** that may have anti-viral properties. If you like green tea, go for it. My guess is that you would need to drink a few gallons a day to get enough to make a difference – if it did.

Countries that have a Level 3 Travel Health Notice (widespread, ongoing transmission):

* = **travel restrictions into US**

China *

Europe (Schengen Area): Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands,

Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Monaco, San Marino, Vatican City *

Iran *

United Kingdom: England, Scotland, Wales, and Northern Ireland *

THE REST OF THE WORLD IS NOW CONSIDER TO BE IN PANDEMIC STATUS

US Hotspots – **New York, Detroit, New Orleans**, Seattle, San Francisco, Los Angeles, Atlanta, , Chicago

Let's repeat the next 2 sections from the last 2 newsletters –

What if I Think I Have Been Exposed?

If you have traveled from a high-risk area or believe you have been exposed to someone with Covid-19:

- Take these steps to monitor your health and practice social distancing:
- Take your temperature with a thermometer every day and monitor for fever. Also watch for cough or trouble breathing.
- Stay home and avoid contact with others. Do not go to work for this 14-day period. Discuss your work situation with your employer before returning to work.
- Do not take public transportation, taxis, or ride-shares during the time you are practicing social distancing.
- Avoid crowded places (depending on what is open - shopping centers, movie theaters, food stores) and limit your activities in public.
- Keep your distance from others (about 6 feet or 2 meters).

This can also be applied to crew traveling to a ship before allowing them to board, or if they must board, quarantining them upon arrival. Crew movement decisions are going to be very important and difficult during this period.

What to Do If You Get Sick

If you get sick with fever or cough,

- Try to seek medical remotely via Telemedicine or phone your doctor. Call ahead before you go to a doctor's office or emergency room for guidance.
- Almost all mild cases and cases without shortness of breath or decreased oxygen in the blood are managed at home and you will be sick for about 10 days.
- Tell your doctor about your recent travel and your symptoms and any contacts you may have had.
- Avoid contact with others.

** If you develop any shortness of breath, seek medical care right away so they can measure the oxygen in your blood. You will likely require hospital admission

If you need to seek medical care for other reasons, such as dialysis, call ahead to your doctor and tell them about your recent travel to an area with widespread or ongoing community spread of COVID-19 or contact with potential Covid-19 cases.

All of this applies to crew!!

Crew must be encouraged to report any illness very early. As long as there is no difficulty breathing – no matter how badly they feel otherwise – they will most likely be managed on the ships – depending on the next port. Crew with significant co-morbidities, such as cardiac disease, diabetes and COPD (especially if they still smoke) may be disembarked sooner. Otherwise, as soon as the crewmember develops difficulty breathing, they should be medically disembarked as soon as possible as rapid deterioration is possible.

We are working on Future Care recommended protocols for transporting new crewmembers to their ships that seek a balance between risk aversion and logistics. If you would like to discuss availability and pricing for program a specific to your mariners please contact us at FC Info info@futurecareinc.com.

TESTING

We keep receiving requests for information regarding the use of bedside IgG/IgM testing. Our earlier comments still apply as to the limitations of this testing, especially for the asymptomatic and the patient who has only been symptomatic for a short period.

The Polymerase chain reaction (PCR) testing is getting faster and will be more widely available as governments try to determine the extent of disease burden. Abbott has developed a test cartridge that gives results in 15 minutes on the normal point of care device. This is excellent if you have access to a facility with this testing. We estimate that in the next 30 days rapid bedside antigen tests will begin to be released utilizing a methodology similar to the IgG/IgM technology but for the actual viral antigen. The sensitivity and specificity of these tests will have to be evaluated. The major utility of the IgG/IgM tests will then be to identify those individuals who have had the virus and recovered with immunity. These individuals will be critical to return to key positions in the workforce and also to donate plasma containing viral antibodies to critically ill patients.

Advice:

- Keep your teams healthy at home and on board through nutritional and healthy diets, exercise, rest, stress reduction, exercise, smoking cessation/reduction and rigorous social isolation. Constant reminders about frequent hand washing.
- Everyone should wear a facemask when going out in public. Assume everyone is a carrier.
- Develop policies for crew changes that include isolation at home, strict precautions while travelling and isolation after boarding.
- Review policies for symptomatic crew. Identify high risk crew and take access to care into consideration when deploying – staff smart.
- Review and improve sanitation procedures on board – full sanitary barrier at turnaround.
- The virus will come in waves. The next 4-6 weeks will be worst in the US/Canada/Europe. Countries next yet overwhelmed will likely be so later *i.e.* India. Consider this in sourcing plans.

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>.