

To my valued patients and colleagues

A special thank you:

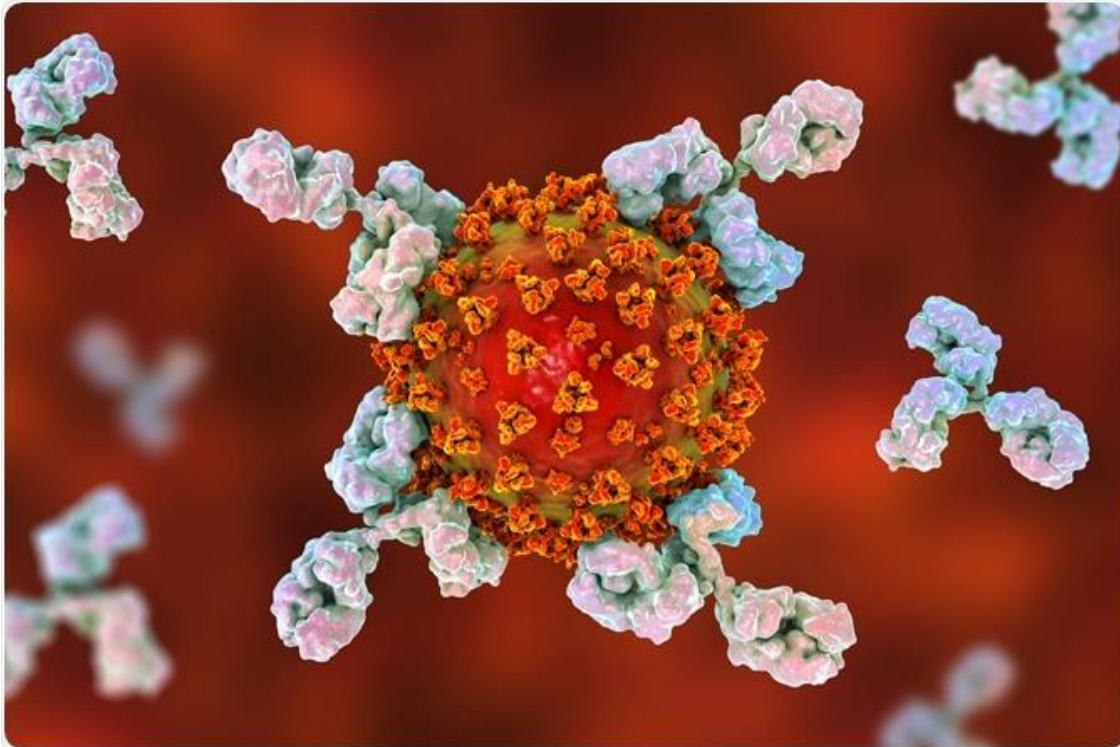
Working behind the scenes on this newsletter is an unsung hero, **Dr. Phillip Zakowski**, a simply outstanding infectious disease expert who reviews my missives for any gross errors. His job is especially difficult. Aside from helping lead Cedars-Sinai's COVID-19 response, he continues his regular infectious disease practice. He is my go-to guy for all things infectious. Adding to his burden, he actually has to read through my twisted prose BEFORE my wife makes these newsletters intelligible. Phil's work is something that is truly remarkable. In any event, a special shout out to Phil, valued friend, colleague, and reviewer.

Am Yisrael Chai עם ישראל חי

Israel has done it again ([ישראל עושה זאת שוב](#)). It has been reported that Israel has made a major coronavirus treatment breakthrough. Researchers at the Israel Institute of Biological Research (IIBR) have isolated an antibody that can potentially be used to treat patients with COVID-19. Researchers say that this antibody meets the three criteria needed for successful treatment. First, the antibody is monoclonal, meaning it is produced by a single clone of cells consisting of identical antibody molecules and therefore does not have other proteins which would make it difficult to use. Second, the antibody has been shown to neutralize the coronavirus in the lab, although animal and human experiments still need to be conducted. Third, because there are mutations in the coronavirus, the antibody was tested against the most aggressive strain and it was successful.



These new monoclonal antibodies are laboratory-produced molecules engineered to serve as a substitute antibody that will restore and enhance the immune system. They bind “antigens” or pieces of the virus. In the picture below, the white antibodies are attacking the red SARS-CoV-2 virus. The IIBR is now patenting the discovery so they can proceed to commercial development. The IIBR was also involved in collecting plasma from recovered patients to aid in treatment and research of coronavirus sufferers. In addition, along with researchers at MigVax, they are close to completing the first phase of vaccine development.



Speaking of vaccines

We have previously mentioned Moderna’s vaccine on these pages. There is good news on this front as the FDA has approved its application to run Phase 2 studies. Phase 2 trials will include 600 participants receiving two different dosages and a placebo arm of the trial, as well. The company said it could begin Phase 3 trials this summer, where it previously said it would start this in the fall. We are really moving along on the vaccine pathway and that is good news.

Abbott report formats

I know this is yet another blurb on antibody testing. But this is how the reports from Abbott will read. Anything less than 1.4 will be read as a negative test. This is a little different than the form I showed in my last newsletter. If we utilize additional testing, from additional sources I will use this newsletter to show you what we are seeing.

Procedure	Result	Abnormal	Range	Units
SEROLOGY				
SARS-CoV-2 IgG Interpretation	Negative		Negative	
SARS-CoV-2 IgG	0.02		<1.40	Index
<p>The Abbott SARS CoV-2 IgG assay is a chemiluminescent microparticle immunoassay intended for the qualitative detection of IgG antibodies specific to the nucleocapsid protein of SARS CoV-2 in serum from patients who are suspected to have had COVID-19 disease.</p> <p>This test has not been Food and Drug Administration (FDA) cleared or approved and has been authorized by FDA under an Emergency Use Authorization (EUA). This test has been authorized only for the detection of IgG antibodies against SARS CoV-2, not for any other viruses or pathogens.</p> <p>Negative antibody results do not rule out SARS CoV-2 infection, particularly in those who have been in contact with the virus. Testing with a molecular diagnostic should be considered to evaluate for active infection in these individuals. Results from antibody testing should not be used as the sole basis to diagnose or exclude SARS CoV-2 infection or to inform infection status.</p>				

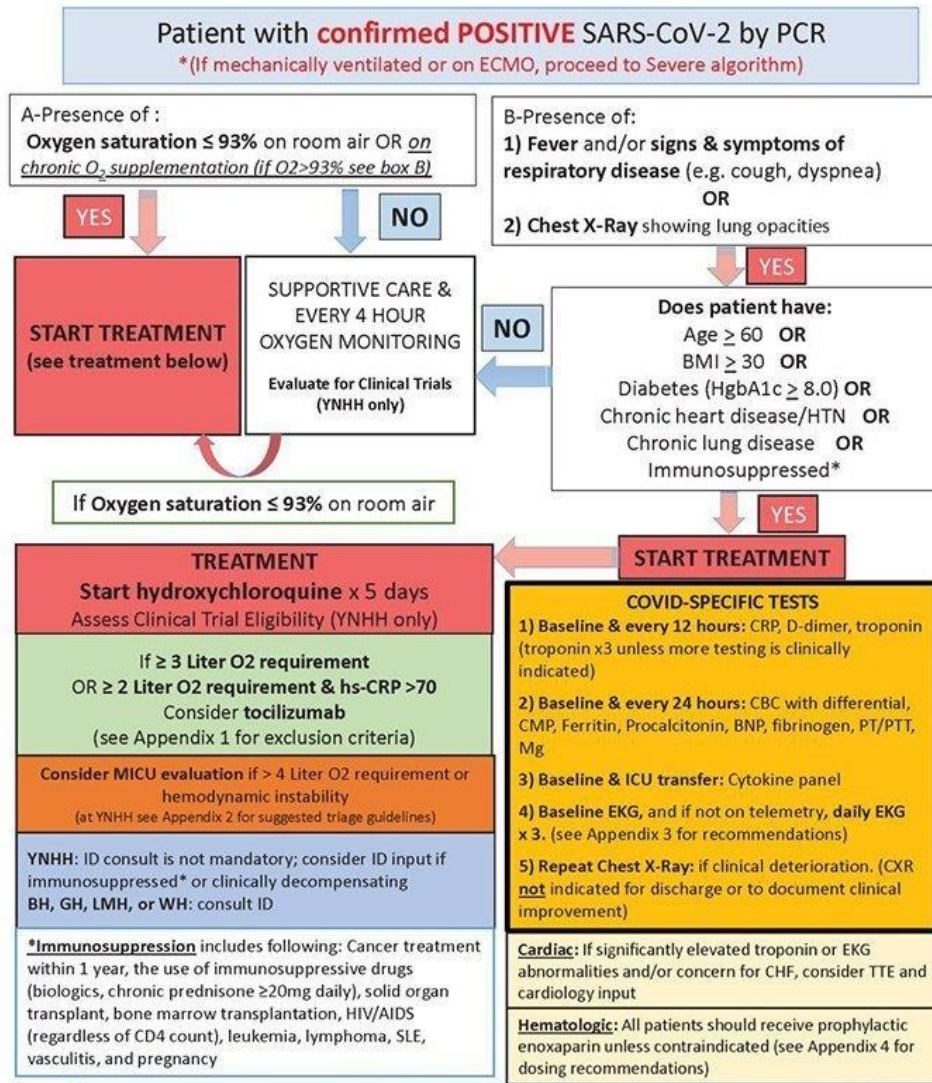
Yale Protocol for treating coronavirus updated May 1

I thought I would let you in on how hospitals are treating coronavirus. On May 1, Yale health systems updated their treatment protocols

Hydroxychloroquine is currently first line, and tocilizumab second line for people with confirmed coronavirus. Patients enter into a treatment algorithm if they have an oxygen saturation below 93% on room air or chronic supplementation or are acutely ill. Hydroxychloroquine is used for 5 days and tocilizumab is considered if not contraindicated and oxygen requirements pass 3 L (or 2L with a c-reactive protein above 70). Most of you are familiar with Plaquenil, but tocilizumab is an intravenously administered immunosuppressive drug that is used to treat rheumatoid arthritis and is a monoclonal antibody against the interleukin-6 receptor which helps combat the cytokine storm seen in COVID-19 patients. In addition, patients are placed on prophylactic enoxaparin to thin the blood. ICUs are notified early if a patient’s clinical situation worsens because patients can deteriorate quickly. It looks complicated, but the Yale scenarios for non-severe and severe COVID-19 patients are shown below.

YNHHS Initial Treatment Algorithm for Hospitalized ADULTS with Non-Severe* COVID-19

Disclaimer: There are no FDA-approved treatments for COVID-19, supportive care is standard of care. Limited treatment data are available & clinical judgment is warranted – Algorithm last updated 4/13/20



Once a patient is in the ICU, protocols change. For example, the degree of blood thinning is based on suspicion of blood clots and a d-dimer test. The heart is monitored for QT prolongation, an abnormality associated with hydroxychloroquine. Ultrasounds of the heart are taken to assess the level of cardiac involvement associated with the virus.

Previous versions of the Yale algorithm included the use of HIV drugs, but these have shown no benefit.

YNHHS Initial Treatment Algorithm for **Hospitalized** ADULTS with **Severe** COVID-19

Disclaimer: There are no FDA-approved treatments for COVID-19, supportive care is standard of care. Limited treatment data are available & clinical judgment is warranted - Algorithm last updated 4/13/20

Respiratory failure, including **Mechanical ventilation and ECMO PLUS**
confirmed POSITIVE SARS-CoV-2 by PCR



Algorithm reviewed by YNHHS SAS and YNHH/YSM Ad-Hoc COVID-19 Treatment Team

Medscape

Source: Yale University

Yes, doctors' practices are affected too

This issue of the newsletter is more doctor heavy so I hope you can forgive me. Surveys are not the most scientific form of understanding what is happening, but they can be informative. Los Angeles and Orange County medical practices are seeing "the big hurt". I am concerned that many private practices will not survive. If doctors' offices and clinics fail, who will take care of the American public?

Here are the stats, you decide.

In Los Angeles and Orange Counties:

- 97% of physician practices are worried about their practices' financial health due to the financial stress they are experiencing as a result of the COVID-19 public health emergency.
- Virtually all practices (98%) report a substantial decrease in patient volume.
- Practice revenue has declined by an average of 67%.
- Practices have had to implement multiple, drastic measures to stay viable.
- Approximately half (48%) of practices have had to lay off or furlough physicians/staff.
- 62% of practices have reduce physician/staff hours.
- 33% have had to cut physician and staff salaries.
- 14% have had to close their practice temporarily.
- Two-thirds of practices (67%) applied for a loan created by the CARES Act.
- Physicians ranked financial assistance (66%), PPE (56%) and temporary housing (45%) as the first or second most important resources they need.

Music and medicine

One of the greatest sopranos of all time was American-born Greek Maria Callas. Although exceptionally talented, she was rather a tragic figure. She fell in love with Greek millionaire Aristotle Onassis while they were both were still married. Unfortunately, he saw her as someone to have fun with and ultimately married Jacqueline Kennedy, the late president's ex-wife. After Onassis died in 1975, Maria isolated herself from the world at her home in Paris. She would smoke all day and take sleeping pills and painkillers. On September 16, 1977, a decayed version of her former self had breakfast in bed and blacked out. Maria died before the doctor could arrive. Her death is listed as a heart attack but might more appropriately be called a broken heart.

How do you choose just one work of Maria Callas? Luckily, YouTube allows us to look into the past.

Gianni Schicchi "O mio babbino caro" : https://www.youtube.com/watch?v=X1f9s9n_Kjo

Madame Butterfly "Un Bel Di Vedremo": https://www.youtube.com/watch?v=EqChJU406_I

Norma: Act I, Casta Diva : <https://www.youtube.com/watch?v=ERR2i7nCyrQ>

Carmen: Act 1 Scene 4: No 5 Habanise, "L'amour est un oiseau rebelle" : <https://www.youtube.com/watch?v=UWavHbo8T5s>