“Weathering the Coronavirus Storm”

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Continued Updates on COVID-19
April 1, 2020

SOCIAL DISTANCING EXTENDED TO April 30!

As the COVID-19 pandemic continues to bring the U.S. more documented cases than any other reporting country. Keep in mind that numbers from countries China are questionable, but South Korea tested 90% of their patients and is on down slope of the disease. As of March 25th:

Currently (April 1), there is a 2% death rate so far in the U.S. (Italy-10%). We are close to a peak and should see that occur within 2 weeks. To control this pandemic, the death rate needs to be 1% or under according to an article in Science Journal, March, 2020.
Is it time for a national lockdown and masks while in public?

This is the latest discussion. With a disproportionate number of cases, the states with the most cases (36) have now had orders for stay at home from their governors including Florida as of yesterday.

The heartland of the country is the most rural and distance is already in play to some extent. It stands to reason that those states may join as cases appear.

Fighting an economic disaster that is long lasting versus losing more lives is a lose-lose situation. Regardless of the decision to go national will create partisan upheaval.

The countries that are seeing fewer cases and fewer deaths have tended to be in countries where there the government can control the people in much more draconian ways. Will our country follow the rules of complete lockdown and wearing masks when out of the house?

To date, only those sick are required to cover their face. Now it is already becoming popular to use any kind of facial cover, even a scarf when going out for necessities as discussed by our president.

That decision will probably come in the next 2 weeks as we see the beginning of the apex of cases in dense areas.

CDC statistics on Morbidity and Mortality in the U. S. as of April 1, 2020
Note the numbers of cases per state are greatest in Florida, New York, Connecticut, Lousiana, Illinois, Michigan, and California. Georgia, North and South Carolina, and Alabama are in the second class of most cases. 1/3 of the counties in the U.S. have not reported any cases. 85% of those are rural. That tells us that isolation from groups is the key to mitigation and control of this virus.

The CDC has requested that 3 states not leave their borders and stay at home. Travel from New York, New
Jersey, and Connecticut should be severely restricted unless a necessity. However, flights continue to Florida from multiple sites, even South America. We have cruise ships trying to dock with many sick individuals. This increased stress on Florida will raise the number of cases and put more pressure on our medical professionals and hospitals. Pressure increases on Florida’s governor.

Keep in mind, not every country’s numbers are believable! With China population more than 1.2 billion and the U.S. with 129 million people, can anyone believe the U.S. has more cases? It rests with fewer tests in other countries and lack of reporting. And the amount of testing in those countries except for a couple of oriental countries is far higher in the U.S.

As we start to see the doubling of the virus increase in days (was 2 days and now almost 4 day), there may be good news that things are beginning to get under control, but keep in mind we have not seen the peak of cases and deaths yet. Over ¾ of our population is under order to stay at home.

High risk people

![Pareto chart showing chronic illnesses among adults in the US](image-url)
**Lungs are the target for COVID-19**

These people are the target, but people with obstructive sleep apnea, smokers, obese people, skilled nursing facilities, those that can’t mobilize well, and all those immunosuppressed by disease or medication are also at high risk. That includes a sizable number of Americans. Don’t forget the thousands of first responders, medical personnel, and those who won’t follow the rules.

Adding to the number of symptoms (found later in this report), China is seeing many cases of conjunctivitis (pink eye), which was recently added to loss of smell and taste.

Remember, as many as 25% of people do not have symptoms. That is why the CDC is trying to decide whether we all should cover our faces if we need to go out.

**Liver disease happens too!**

As reported earlier, the gastrointestinal tract is involved in this disease. Now, in studies with the SARS virus showing liver disease, liver impairment is now being seen with COVID-19, but some of the injury may have been from treatment regimens (anti-virals, antibiotics, and steroids. Elevated liver enzymes are seen in many of these patients. For those with pre-existing risk factors (hepatitis, alcohol abuse, diabetic fatty liver disease, immune diseases, etc.). If the gastrointestinal system is involved in these patients, liver injury is highly likely. Medscape, March 20—Dr. Nancy Reau, chief of hepatology, rush Medical Center, Chicago, Ill.
Cardiac injury too!

20% of patients of patients in Wuhan, China with COVID-19 demonstrated cardiac injury with elevated blood tests (troponin 1), an important test for cardiac injury. If patients showed cardiac injury, there was 51% higher hospital mortality rate compared to 5% if there was no cardiac injury evidence. 38% death rate occurred in those with elevated cardiac monitors without any underlying heart disease and 69% compared to a death rate if heart disease pre-existed. This compared to 13% if these cardiac monitors were not elevated. JAMA Cardiology, March 27,2020

What other age groups are being infected?

Those over 65 are clearly at risk (16% od the population). However, recent statistics reveal that ages 20-44 represent 29% of confirmed cases, according to the CDC. It is also reported that those 65-84 represent more than 1/3 of those hospitalized, but 20% of those hospitalized are between the ages of 20-44. The contact of these younger people with older people is staggering, and that is the problem, since the majority have are asymptomatic or have mild cases. These younger people are a major source of infecting these older people in their family.

What about people who are getting well...when can they stop quarantine?
For those who have had the symptoms and are now well, the CDC guidelines are that from the time of the last symptom of the virus, you must continue to quarantine for 7 days more days (or 7 days after testing positive with no symptoms), and after 3 days without fever (no artificial lowering with Tylenol, Ibuprofen, etc), the patient is likely not contagious.

Recent reports from Beijing, China state that viruses will persist in the saliva and feces in patients infected even after pharyngeal swabs test negative. Are they still infectious? Once antibodies are produced, they should not be infectious. That information is not known for this virus. More data needs to be brought forth before that sensitive issue can be answered. Annals of Internal Medicine, March 30, 2020

How did 3 countries contain the virus?

Vietnam, South Korea, and Taiwan

These 3 countries jumped on the crisis faster than every other country including the U.S

Even though we are behind, closing borders, early testing and screening, prevention of people coming into their country, and isolation with closure of all areas that created crowds. And masks in public! That is how they did it. We are doing it but too late to now be the number 1 country with the most cases, but much fewer deaths thanks to our incredible medical personnel. Public health measures are ABSOLUTELY NECESSARY AND MUST NOT BE DISOBEYED.

Why did the U.S. not shut down earlier?
The U.S. and other large countries were not told of the outbreak and severity by China for over 2 weeks and China lies to us constantly about a host of issues. There are many excuses, conspiracy theories, etc. that may or may not be valid, but none are documented.

The main reason is that the U.S. had no idea of the magnitude of the pandemic. Most of the medical profession and hospitals are not equipped to handle such an enormous burden. The stockpile of personal protective equipment has been much smaller than needed and has been for decades. That is the fault of many administrations and the people running disaster preparedness.

However, the rapid mobilization of the government (CDC, FEMA, etc.), the private sector, and most of the citizens have responded as fast as possible, and we are getting up to speed.

We are probably about 2 weeks behind with testing, providing protection for our citizens, and even our healthcare workers.

We are now accepting isolation, feeling the stress, trying to cope, and praying this crisis will pass. Hindsight is always 20/20.

The value of testing goes down as the virus infiltrates the country. Testing has its greatest role early on to determine steps to address the pandemic. As the virus spreads through a community, one has to assume people who have viral symptoms (described before) have COVID-19 and do not need to be tested.

These asymptomatic or mildly sick people are only clogging up the system, and it is best to assume they are positive and then their actions will be determined by the severity of the disease. Calling one’s doctor (or
telemedicine) is the right move before automatically assuming one has to go to an emergency medical facility. Of course, many will not heed this recommendation and continue to burden the medical system.

When a person begins to get well, when can they stop the quarantine?

According to the CDC guidelines, after no symptoms are present for 7 days (or 7 days after having tested positive) and 3 days without any fever (greater than 99F), they can be considered non-contagious.

Testing as the pandemic continues!

The latest innovation will be a game changer! A 15 minute test using a throat or nasal (just inside the nostril). This will allow patients to be triaged from point of care separating positive people from those negative.

The testing is continuing to evolve. Soon there will be tests for home use (swab only has to go into the front the nose and the other to the back of the throat). This test could only take much less time.

Drive by testing is increasing as well in large metro areas, but Sarasota had to cancel the event over the weekend, because no one was coming through. The reason is they need a prescription from their doctor, and they are not going to the doctor. This must change.

Antibody finger stick testing is also beginning to allow experts to know just how many people were actually
infected (with and without symptoms). That way we can know the actual number of cases and compare to the number of severe cases, hospitalizations, and need for the ICU with a respirator, and deaths.

Percentage of deaths is going to wind up being about 1%, which puts this virus close to the other major novel coronaviruses. It is 2% right now and to control a pandemic, that percentage needs to approach 1%.

In a perfect world, everyone should be tested. There are 4800 cases that have recovered that can donate their plasma to help people recover.

Factors to consider when trying to determine the length of a pandemic

Experts have found that most pandemics last about 3 months before the infections begin to drop.

There are 2 factors that determine length—1) transmissibility 2) severity of disease

JAMA, March 24, 2020 published information comparing COVID-19 to SARS, Swine Flu (H1N1), and MERS.

These other viruses had differences—some were very infectious and transmitted the disease easily (Swine flu) but the severity was not severe.

SARS and MERS were very severe. SARS caused only 774 deaths but only 8,098 cases (9.6% death rate). MERS only had 2494 cases but killed 858 people (34% death rate).
However, there is concern that COVID-19 is both easily transmissible and severe. Time will give us the answer, but in meantime, both treatment and mitigation (isolation) is necessary to combat this virus.

Approximately 14% of cases have been described as severe.

**Update on treatments**

Most have now heard about the malaria and autoimmune disease drug—hydroxychloroquine/with or without Zithromycin. The drug has been used in over 1100 cases in NYC with good results. This occurred after a French doctor, Professor Gilles Pialoux had a tremendous result on 400 patients. The actual mechanism of action is not known, but it is being theorized greatly. But so far, within 6 days, as reported in JAMA and Medicine.net, these patients tested negative for the virus after starting this dual drug regimen.

**Why zithromycin?** Because it has been known to carry anti-viral as well as anti-bacterial properties. Other antibiotics do not work.

There are side effects and drug interactions of these drugs, but it requires a prescription and the doctor must discuss this with you.
A consequence of the supply running dry already is that those patients with rheumatoid arthritis, lupus, and other autoimmune illnesses will have a hard time getting their meds.

**Convalescent plasma** (blood plasma*) is being shown to provide help for those very sick. Antibodies formed by the exposure to the virus can give immunity to others. This is the plasma of those who have recovered from COVID-19. A study in China reported by JAMA showed that 5 patients were showing less viral load within 24 hours and gradual resolution of their pneumonia within 3 days. JAMA, March 25, 2020 *plasma is the liquid portion of blood without the red blood cells.

**Genetically engineered antibodies** may be a major contribution in the future, but for now those that who have those antibodies can help others.

**Remdesivir**, an antiviral agent is also showing promise, but to get it will be a challenge. It is only being used in clinical trials so far.

Other antivirals and HIV drugs are being tested. It will be interesting if HIV positive people who are taking these drugs don’t get the virus.

Even breast cancer biological medications (immunotherapy) may have benefit. Actually any medication that manipulates the patient’s immune system could be a candidate.
Vaccines are not going to help this year, but are the future salvation in future pandemics of COVID-19. Currently there are 44 candidates testing their vaccine.

I have already discussed treatment of mild to moderate disease which can be found further in recent reports which are summarized below. Although zinc has some anti-viral properties, there is really no evidence yet that it is effective in preventing transmission of COVID-19.

China is carrying out a clinical trial on Vitamin C. Just how it might play a role is unknown. Over the decades this vitamin might prevent viral illnesses, however, it needs to be known that as soon as the sites in the liver are filled up, the rest goes into the urine. That goes for any vitamin.

PRAYERS AND THANKS TO THE BRAVE FIRST RESPONDERS AND HEALTHCARE WORKERS! Dr. Sam
Previous report has been completely revised!!!

March 24, 2020

1. Where did this virus come from?

Not since the Spanish flu pandemic of 1918 have we seen a virus spread so quickly. The soldiers of WWI came home from Europe with virus after the end of the war, and it killed 50 million people. And they didn’t even have airplanes and massive travel as we do today.

Bats have been responsible for some of the worst pandemics and birds, pigs, and other animals have been the vector that brought it to humans. It is thought that bats were the source.

It took just a few weeks thanks to China’s New Year going on at the same time which spread the virus much quicker because of air and rail travel. Sadly, the Chinese flew all over the world in celebration since they were off work.
There was a delay in informing infectious departments around the world that they had a serious outbreak.

The number of cases exceed most other countries because of their 1.3 billion population. Italy and Iran have a significant Chinese population (including the U.S.) which probably correlates with the incidence of spread, and that is why these countries lead in the number of cases.

Thankfully air travel from China was stopped early on by President Trump. The mobility of the world has been a major factor in spreading infection throughout the globe in past decades.

COVID-19 was first reported to the World Health Organization on Jan 31, 2019 who declared a world health emergency, and on March 11, 2020, was declared a pandemic, the first pandemic since 2009 (swine flu-H1N1).

The virus was named SARS-COV-2, since it is quite genetically similar to the SARS virus (severe acute respiratory syndrome), and the WHO named it COVID-19 soon after (coronavirus 2019).

2. Biology of the COVID-19

The term novel virus implies that the human does not have any immunity against it, because we have never been exposed to it. SARS, MERS, and now COVID-19 are such viruses.

The coronavirus contains about 30 proteins capable of unlocking the protective protein layer of human cells especially lung cells. Viruses can’t replicate on their own needing a host. When this occurs, the virus turns the
human cell’s function into production of viral particles. These viral proteins are the key to our vulnerability, especially lung tissue.

As that occurs those lung cells die being overwhelmed by the virus and those dead cells block oxygen transfer in the lungs and causes areas of infection and pneumonia. This causes the shortness of breath, respiratory failure, and potentially death. This pathology slide shows the lung tissue from one of the first deaths due to COVID-19.

Drugs to block those proteins centers around the way to attack this virus. If a drug can be produced to prevent replication of the virus, the infection stops, according to Nevan Krogan, Professor and Director of the Quantitative Biosciences Institute at the University of California, San Francisco. 22 labs worldwide are working on these types of compounds to stop this viral production and infection.

Other drugs are being studied that prevent the virus from entering the human cell by blocking the viral entrance rather than just trying to kill the virus outright.

Treatment protocols will be discussed later under treatment.
3. Transmission of COVID-19

Outbreaks in South Korea, Iran, Italy, and France were the first to discover the spread through their countries, and the U.S. was right behind them with passengers coming back to Washington State. Now all states have cases with 50% of the cases in just 12 counties, but the rest are everywhere. New York and Washington State have the most cases in densely populated areas.

Certain latitudes across the world seem to be more affected than others, being more prevalent in northern parts of countries. A temperature of 39 degrees Fahrenheit and 20-80% humidity is most conducive for viral survival. Warmer climates especially tropical climates are seeing less breakouts like most of my readers, but that should not make people complacent. This was based on the average temperature in China, Italy, and Japan.

It suggests a seasonal influence, although that does not mean infections can’t break out anywhere and through the summer. It also may return this fall, but hopefully we will have a safe and effective vaccine by then.

Dr. Marty Makary, an infectious disease expert said that pandemics usually last about 3 months, so we are still looking at over several weeks to go.

This “novel” coronavirus is more infectious because humans lack immunity to novel viruses, and even younger healthy people are getting sick. Most flu viruses are recognized by the human immune system. Most novel viruses come from animals who infect other animals not humans, however, when they mutate, they can infect humans more aggressively.

Before the other 2 previous novel coronaviruses mutated (SARS-China origin in 2002 and MERS-Middle East origin in
2017), these viruses were considered inconsequential causing the common cold in 1/3 of the cases. Now we are learning that these viruses are a greater threat now and in the future.

Difference in novel viruses—the coronavirus is an RNA virus genetically, whereas most flu viruses are RNA/DNA. RNA viruses are not recognized by human immune systems. Mutation by this virus has allowed human to human transmission in just a few short weeks infecting 180 countries as of March 24.

We now have two strains of COVID-19—S and L strain. Little information about these strains is yet to be available.

20% of patients in the hospital come from ages 20-59, so millennials must take heed! You can get very sick!! Everyone, even the young, must obey the laws set by states and the federal government. When transmission rates drop, that is when the virus can be considered less infectious.

4. Can the cure be worse than the disease??

This question is being asked by many currently. Isolation and stay-at-home orders (Lockdown) will continue to be mandatory for those exposed, those with symptoms, and those in their household.

For areas of the country that have the majority of cases (certain New York, California, and Washington state counties) are mandatory, but places seeing few cases might consider, in time, allowing certain workers to go back to work with special precautions distancing (6 feet), and absolutely no symptoms or fever. 56% of all U.S.
cases are in New York metro area, so we are not seeing the spread feared. There will be cases in every state and many counties as shown in the USA graph at the beginning of this report. Travel from dense areas to other parts of the country is not a good idea. It will extend our problem, because many of these people will carry the virus to other states. Workers should take their temperature daily. Self responsibility will play a huge role. Will Americans comply?

If we shut down every workplace in the country where the disease is less severe, we might survive financially. With the Congress working on an almost $2 trillion dollar relief package, this will only last so long.

America must stay open if possible where it can when the threat lessens. If re-opening creates more cases than before, we will have to back off. No one has a crystal ball. But it is the experts that must advise the president and vice-president as to exactly what can and cannot be done to restart America without having a major resurgence of the virus.

5. Why are children somewhat exempt from the virus?

A French doctor, Dr. Benjamin Davido, an infectious disease specialist outside of Paris, said there are 2 hypotheses:

1) Children are exposed to other coronavirus more often than adults, as they can be infected with childhood illnesses (1/3 are other coronaviruses) causing infection in the respiratory tract (a cold) or gastrointestinal tract
(diarrhea), and therefore, they may have developed some immunity from these challenges.

2) The immaturity of the lung lining in children may be sufficiently immature that it may prevent the viral particles from attaching to the epithelium.

Children as young as 6 months are being infected in small numbers. They often do not start with fever in these small numbers, but start with nausea, vomiting, and diarrhea, as children’s gastrointestinal tract is so sensitive to any bodily upset, so that is not surprising. Very few have died.

6. Symptoms

This is demonstrates the likelihood of specific symptoms.

Remember, the signs and symptoms overlap with the flu. Also, loss of smell (anosmia) and taste (dysgeusia) has been recommended to be added to the list of screening symptoms for COVI-19. It could even occur before other symptoms.
Fever, dry cough, and shortness of breath are the most obvious, but the above list covers the percentage of patients reported by the WHO. Although 80% have mild symptoms, 5% need to be in the ICU with ventilatory assistance.

7. X-ray findings of COVID-19 pneumonia

The chest X-rays of this virus are severe. Note the ground glass appearance of the lungs and the spots all
over the lung, indicating involvement of all lobes of the lung.

Why does the pneumonia cause respiratory failure in those who are the most vulnerable?

When pneumonia occurs in someone very weak from underlying illness creates an environment for respiratory failure which puts eminent stress on the heart. White blood cells called neutrophils which are the cells that respond to infection. In this kind of pneumonia, an influx of neutrophils into the lung tissue stimulates certain inflammatory markers (cytokines) which can trigger ARDS (acute respiratory distress syndrome) which backs up fluid in the lungs leading to heart failure and potentially death. This storm of neutrophils that causes ARDS is the reason for death.

Markers for severity are now known including a high neutrophil white blood cell count, high fever, older age, immunosuppression, an elevated lactic dehydrogenase (LDH), and D-dimer levels.

An elevated LDH test is present in numerous severe health issues such as to liver disease, heart attack,
anemia, muscle trauma, bone fracture, cancer, and severe infections. **D-dimer test** is used when a pulmonary embolus is suspected because of a blood clot.

This massive infection depresses the immune system by dropping the white blood cell count that provide immunity such as low counts in the blood in lymphocytes, monocytes, and macrophages.

### 8. Treating milder cases

Treatment for milder cases include antihistamines, decongestants, cough medicine, mucus splitters, Tylenol for fever and muscle ache (never give a child aspirin because of the possibility of Reye’s syndrome). Aleve or ibuprofen works as well for adults, although there are internet sites that report these NSAIDs may actually prolong the illness (not proven in evidence based research). Elderly people or anyone sick that must quarantine needs to be sure their prescriptions are current and available.

Oxygen is mandatory for those short of breath, as pneumonia will drop the oxygen levels in the blood, and if the patient has underlying heart disease, lung, or kidney disease, diabetes all can complicate this virus and potentially cause death.

Ventilatory assistance is necessary if the oxygen levels in the blood can’t be maintained with more conservative measures.

### 9. Care for the sick at home--guidelines
For those in the household, they must distance themselves physically from the sick person, and constantly wash their hands and clean surfaces frequently. Do not sleep with them, kiss or hug them. They need to be isolated in their own home from other members.

Those sick should wear a mask at times to prevent respiratory droplets of mucus from spreading into the room. Those caring for the sick could wear a mask (may not prevent infection), but washing the hands is also very important.

Feed them separately and keep their dishes separate, cleaning the dishes separately. It may be necessary to have groceries delivered if alone and sick and don’t have anyone to shop for them. Reach out to them if needed. Stocking up suggestions should not get out of hand with everyone clearing the shelves of the grocery stores. 2 weeks max is suggested in these cases.

Let the sick use a private bathroom, as the gastrointestinal tract sheds the virus too. Clean the bathroom frequently.

Chances are people who are fairly ill anyway will need hospitalization, and consultation with the doctor is obvious. You may not be able to visit them.

Wash their clothes separately in hot water. Also segregate their soiled clothing from other dirty clothes. Clean the floors often with antiseptic cleaners. Vacuum the carpet and discard the bag or use a separate cleaner.

Testing of family members and the patient will need to be performed when tests are available, and all family members must quarantine themselves for 14 days and need testing at 14 days after consulting their doctors.

No visitors around anyone sick! Do not go to a nursing home to see sick family or friends.

Do not let sick individuals touch pets as they could transmit the virus from their hair. Pets are not known to transmit the virus to humans.
10. BEWARE OF Cybersecurity malware and scammers

EXECUTIVE SUMMARY:
A malicious website pretending to be the live map for Coronavirus COVID-19 Global Cases by Johns Hopkins University is circulating on the internet waiting for unwitting internet users to visit the website. Visiting the website infects the user with the AZORult trojan, an information stealing program which can exfiltrate a variety of sensitive data. It is likely being spread via infected email attachments, malicious online advertisements, and social engineering. Furthermore, anyone searching the internet for a Coronavirus map could unwittingly navigate to this malicious website.

Threat Details

Be very careful where you get your information on this virus. I was sent an alert from that same friend who has friends who work in the Cybersecurity section of our government and warned him about the malicious websites that are being put out regarding the coronavirus. Once clicked on it, a Trojan malware is inserted into the computer. Only consult the CDC website: www.cdc.gov/coronavirus

Also scams are plenty! Watch out for scams on fake treatments, fake N-95 masks, money to you from the government, but to receive, you must give them your Social Security Number or a credit card where the money can be sent. Please notify the National Disaster Fraud Hotline at 866-720-5721 or email at disaster@leo.gov
There are so many bogus treatments on the internet. Vitamins, supplements, and herbs will not protect you from this virus like exercise, good health, good nutrition, and good sleep with a minimum of stress.

Another point that needs to be made. For those taking immunosuppressants, DO NOT STOP THEM! The underlying disease is probably more important than the virus. Regardless, if a person is contemplating stopping, please talk to the doctor about this issue.

Based on the incidence of disease in the U.S., it will not be surprising that the COVID-19 Task Force could change the mitigation guidance for different parts of the country, but the final decision will come from the state government.

THIS COMPLETES Part 2 of the April Medical News Report. Updates will continue as needed based on new medical evidence of successful treatments and preventatives. Please stay at home as much as possible. Be kind to one another and stay safe and well, my friends.

Next month, the May report will include

1. More updates on COVID-19
2. Socialism and Healthcare
3. Raynaud’s disease
4. When smokers quit, when can they lower their risks?
5. Sugar babies—college girls finding risky ways to finance college and their lives
6. Depression and other side effects of the Pandemic

Dr. Sam