

**GUESTS:**

Dr. David Nelson: Senior VP UF Health

Dr. Glenn Morris: Director of the Emerging Pathogen Institute. Physician/Epidemiologist Infectious Diseases. Director for Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS).

Dr. John Lednicky: Research Professor, University of Florida

Dr. Ira Longini: Professor of Biostatistics, University of Florida

**NOTES, QUESTIONS AND COMMENTS FROM PANELISTS**

**Dr. Morris:**

**Brief Background on Covid:** Coronavirus is an RNA virus. A common virus that causes a range of illness in animals that range from mild to severe. In humans they are among the most common causes of respiratory infections. Three coronaviruses that have emerged which cause significant illness for humans are SARS, MERS and COVID-19. There is nothing new about coronaviruses, but this virus is particularly “nasty”.

- Basic symptoms: Fever, cough, low white blood cell count.
- People groups at risk include those with diabetes, heart disease, elderly and compromised immune system.
- Estimated that roughly ½ of the infected are asymptomatic.
- Primary route of transmission is through respiratory secretions. Close contact including cough and sneezes briefly in the air and then on surfaces. Can “drift” for several hours.
- The virus is present in the respiratory tract for approximately 5 days before the onset of symptoms and can persist in secretions for a week to two weeks after. Can be present in asymptomatic patients as well. The virus can be present in stool and urine as well.
- Detection: Currently requires RT-PCR, which remains standard assay for the virus. Technically difficult, requires special instruments. Currently we have a national shortage of swabs and reagents to run the machines which make testing large numbers more difficult. Rapid tests have been approved but are just starting to come “on-line”.
- Antibody approach: Looking for presence of antibodies to see if people have been affected. These approaches are good for other pathogens and require a blood test. Feel optimistic about this moving forward.

**Question: Will people who develop antibodies get reinfected if they are exposed again?**

**Dr. Morris:** We are not sure and that is one of the problems. Coronaviruses are not great at creating immunity, unlike measles and mumps. Once you get infected with coronavirus, our experience with other human corona viruses, is that you can get infected again in a year or two. The immune response does not appear to be that protective against subsequent infection, maybe for a short time. There is a lot to learn about the antibody response and what it means.

**Dr. John Lednicky:**

Official Name: SARS CORONAVIRUS2 – Severe Acute Respiratory Syndrome Coronavirus 2 = SARS-Cov-2

- Currently studying how long the virus stays viable on surfaces. Depending on the circumstances these viruses can stay viable for 7-9 days depending on what they are mixed with and the type of surface.
- Testing for antivirals – screening for effective agent against the virus.
- Presently isolating the virus from patients to perform basic research to learn how the virus works.
- Currently using this information to research how it spreads through respiratory secretions from coughs/sneezes. Small particles can contain virus particles that we can inhale. They can come in contact with our mucus membranes in our mouths, nose and eyes. Those particles are very hard to detect and that is one reason we do not know much about it. For infection control it is very important to understand the biohazard that these drifting molecules pose.

**Question:** Which current masks are recommended to prevent the spread? Surgical mask vs N95?

**Dr. Lednicky:** Virus particles are certainly small, but we think the N95 masks are very protective against this virus. That is not true of all masks that are made of flimsy material. Surgical masks work pretty well, also.

**Dr. Ira Longini:**

- Mathematical modeling of the transmission and control of SARS-CoV-2 on local and global scale.
- Currently doing modeling work for the State of Florida, Internationally and for the White House.
- Randomized, adaptive phase 4 trials for COVID-19 therapeutics (therapeutic and prophylactic)
- Randomized, adaptive phase 2b and 3 trials for COVID-19 vaccines.

**Question:** Whether at a state level or county by county level...What are the triggers you are going to look for to allow counties to reopen and send people back to work?

**Dr. Ira Longini:** Probably going to have to have a lot of testing throughout the state. Once the data is compiled and we get below a certain threshold then we can consider opening back up. If we do so prematurely, we run the risk of just pushing the curve to the right.

**Question:** A lot of people are walking around thinking that if they have antibodies, they should be the ones on the frontline with the patients, thinking that if we get this herd immunity then we can get those people back to work. Do we have enough information to know if that is protected immunity?

**Dr. Morris:** Data is not great, but I believe there is probably a degree of protected immunity. I believe it is a worthwhile goal to do the tested immunity to see who has antibodies. Unfortunately, we may have to do some of this by trial and error. Corona virus, unfortunately, does not generate resistance in humans. Which makes all of this really tricky, but I think it is the only way we are going to learn.

**Dr. Ira Longini:** We will look to China and Hong Kong for their data on reopening. The problem with durable immunity affects the vaccine development. Usually vaccines do not confer immunity as well as natural infection does, which means we may have to vaccinate people more frequently.

**Question:** A lot of talk about the potential second wave which occurred with the Spanish Flu. What can policy makers rely on to help make decisions to prevent the second wave?

**Dr. Ira Longini:** The dynamics of this disease are quite different that the Spanish Flu. The second wave hypothesis doesn't hold well unless you lift these restrictions before there is enough herd immunity then you will get subsequent waves of the Coronavirus.

**Question:** What is the current standard of care for treatment? What is the most promising research?

**Dr. Ira Longini:** In the trials, the therapeutics under investigation are:

- Remdesivir, which is an anti-viral.
- Kaletra, which is a combination of two anti virals. (used to treat HIV)
- Kaletra plus Interferon's
- Chloroquine or Hydroxychloroquine.

These are the trials we are familiar with that are being conducted through W.H.O. Those are the four therapeutics being compared for standard of care in randomized trials.

**Dr. David Nelson:** UF Health has a series of studies under way which can be grouped into broad categories: studying how the virus spreads, clinical studies for treatment and prevention, and expanding the arsenal of COVID-19 therapeutics. If people are getting admitted to research hospitals, there are many research trials available. In the community hospitals Hydroxychloroquine is available for use.

**Dr. Morris:** Yes, it is available. However, it is a drug that can cause some significant side effects and we should use caution in the use of this drug.

**Questions around testing gap:** Is UF Health coordinating with the State for testing?

**Dr. David Nelson:** UF health is very interested in coordinating with the state. However, there are challenges such as, we are severely limited in the supplies necessary to perform these tests. It is really a supply chain issue that we are constantly trying to stay ahead of.

**Dr. Morris:** I still don't think we have caught up on testing. Without testing it is going to be very difficult to decide when restrictions can be lifted. Testing is the key.

**Dr. Ira Longini:** At some point we may have to add blood testing or stool, given that the viral detection in the upper respiratory tract starts to dissipate over the course of infection. There is a lot more that has to be done in regard to testing that we are not able to follow up on due to lack of reagents.

Final words to decision makers:

**Dr. Morris:** Testing...a system needs to be put in place for adequate testing.

**Dr. Longini:** Not going to be able to lift restrictions until testing is done on a wider basis. Random testing needs to be done on asymptomatic patients to get a feel for how much virus is actually present by location.

**Dr. Lednicky:** We really need good guidelines for safety workers who clean and disinfect. Cleaning crews need to be educated on how to properly disinfect areas. We need to think about their health, as well as they are putting themselves at significant risk.