

New evidence shows the COVID-19 delta variant rapidly rising

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The University's coronavirus sequencing effort uncovered that there are several variants present in its patient population, but Delta is chief among them and easily transmitted. And its presence is likely triggering

a local surge in the infectious disease.

University of Miami researchers and physicians are seeing firsthand how rapidly the Delta variant of COVID-19 is spreading through the local population.

While just a month ago University researchers had identified just two cases of the Delta variant in Miami-Dade County, new sequencing data from the second week of July reveals that 63 percent of a sampling of COVID-19 patients in Jackson Memorial Health System and at University of Miami's UHealth Tower had the highly transmissible form of the virus. This sequencing data also revealed that 20 percent of patients had the Brazilian variant (now known as Gamma), 9 percent had the Colombian variant (B.1.621), which is dominating that country, and 3 percent had the Lambda variant that is currently the dominant COVID-19 strain in Peru. Dr. David Andrews

"The Colombian variant and the Lambda variant share many of the properties of the other bad players we have seen emerging—like Delta—such as increased transmissibility and a potential to escape the immunity provided by vaccines," said Dr. David Andrews, associate professor in the Department of Pathology and Laboratory Medicine, who is leading the University's effort to sequence COVID-19 positive samples.

Dr. Lilian Abbo, a professor in the Miller School of Medicine's Division of Infectious Diseases, said the data affirms recent case spikes she has noticed at Jackson Memorial Hospital, but suspects that the number of patients with the Delta variant today is much higher. In short order, the Delta variant has permeated the United States, pushing the nation into another COVID-19 surge, particularly among the unvaccinated. It now accounts for at least 83 percent of COVID-19 cases nationally, the U.S. Centers for Disease Control and Prevention (CDC) estimated last week.

"I'm seeing a more than 350 percent increase in COVID-19 hospitalizations," said Abbo, who is also chief of infection prevention and microbial stewardship at Jackson Memorial Health System. "At Jackson Memorial Hospital, I suspect we are seeing more than 80 percent Delta already."

Andrews, who gathered a team this past January to sequence COVID-19 samples, agreed.

"It's obvious to me we will be at 80 to 90 percent Delta by next week," said Andrews, who is also vice chief of pathology for Jackson Health System. Since the Delta variant is much more easily transmitted than earlier variants, the Miller School is ramping its sequencing efforts and will now be gathering samples weekly to survey the variants circulating locally, according to Andrews. While the Florida Department of Health is doing some COVID-19 sequencing that they share with the CDC, reports indicate that only 2,688 positive COVID-19 samples have been sequenced in Florida since the pandemic began, or about 0.1 percent of cases.

Through the sequencing process, researchers can determine the genetic origins of each positive COVID-19 sample, but the process is time-consuming and costly. So, only a fraction of the samples is sequenced. University researchers want to contribute to the effort to monitor the variants in South Florida because this knowledge could help guide medical treatment. Andrews is also working with researchers at the Miller School to develop a rapid test that could determine if a positive COVID-19 sample contains the Delta variant.

Meanwhile, Abbo is observing the severity of the Delta variant firsthand. She said that in UHealth and Jackson Health System urgent care clinics, Jackson Health System emergency rooms, hospitals, and the correctional facilities, she is seeing a spike in COVID-19 positive rates. She

attributes this to the more contagious Delta variant, along with people working closely together at the tragic building collapse in Surfside, many gathering for massive demonstrations in support of protesters in Cuba, and the Miami heat keeping residents indoors.

As an example of the Delta variant's contagious nature, Abbo cited a recent study out of China where researchers swabbed COVID-19 patients with the Delta variant and found that the amount of virus in each sample was on average 1,000 times higher than the original Wuhan strain of COVID-19. "Therefore, the Delta variant is highly infectious and infected people are spreading a lot more virus," she warned. Dr. Lillian Abbo

Abbo also described the type of COVID-19 patients she is seeing at Jackson Health System's three hospitals. First of all, Abbo noted, 90 percent of them are unvaccinated. And of those in the intensive care unit, 95 percent are unvaccinated. She has also noticed that this summer's COVID-19 patients are typically younger than those infected before and often fall within the age range of 30 to 60.

"Vaccinated people with good immune systems are typically able to neutralize the virus, so they aren't getting as sick as people who are not vaccinated," she said. "But we are also noticing that unvaccinated people with the Delta variant seem to deteriorate much faster, even with treatment."

However, in what are called breakthrough cases, people who are vaccinated are still able to get COVID-19, particularly the Delta [variant](#). Even though most of these people are not hospitalized, up to 15 percent of the COVID-19 cases in Miami-Dade County now are breakthrough cases, according to a Miami-Dade division of the Florida Department of Health report. While only about 10 percent of the COVID-19 patients in Jackson Health System are vaccinated, Abbo explained that these

patients are typically elderly, immunocompromised, diabetic, or have another preexisting medical condition.

All of the unfortunate outcomes she is seeing right now point to one solution, Abbo said. "For anyone right now who is not vaccinated, I urge you to go and get vaccinated and believe in science," she urged. "We need to control the pandemic and we will be able to control it with science and by taking responsible actions."

Abbo also pointed out that she is seeing reinfection cases among unvaccinated young adults who had COVID-19 once. Because previous infection is not providing a lasting immunity in most people who had "mild COVID-19" before, it is extremely important to get vaccinated because it is the most powerful form of protection for everyone and prevents severe disease or death, she added.

According to the CDC, Miami-Dade County is now at 12.6 percent positivity rate for COVID-19 and Broward County is at 14.8 percent. The Florida Department of Health reports that last week 73,199 Floridians were infected with COVID-19. Of those, 9.5 percent of COVID-19 cases were found in children younger than 12 and 19.6 percent of the state's caseload contains people younger than 19 years old. Adults between 20 and 49 made up the bulk of the COVID-19 cases, or 53 percent. Just 14 percent of cases occurred in people older than 60.

For South Florida's entire population—vaccinated or not—Abbo recommends wearing a mask any time you are indoors and not at home. She also suggests dining outdoors only at restaurants and avoiding crowded, cramped settings like bars.

"We are at very high numbers of infection in our community, and you can no longer trust who is vaccinated or not," she said. "Everyone is infected until proven otherwise."

More information: Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant:
[virological.org/t/viral-infect ... rs-cov-2-variant/724](https://virological.org/t/viral-infect...rs-cov-2-variant/724)

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