U.S.News

Richmond Doctor Shares Story of COVID-19 Infection, Survival By Associated Press, Wire Service Content April 18, 2020, at 9:00 a.m.

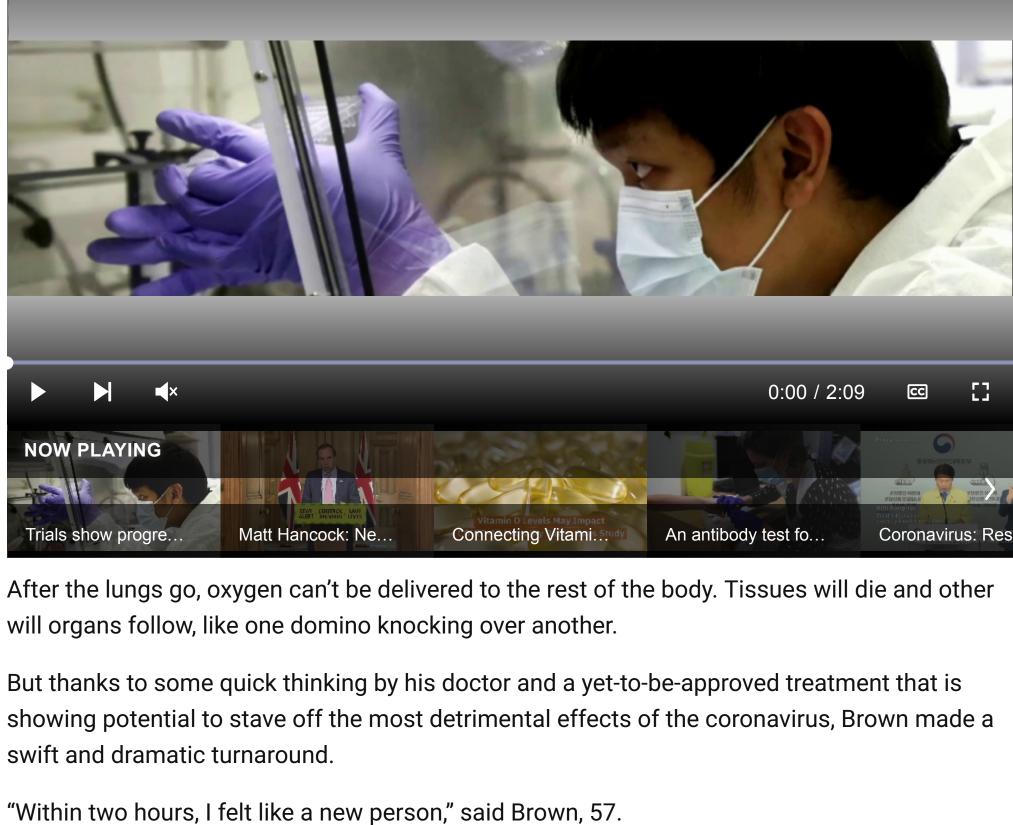
Dr. Drew Jones, IV of Pulmonary Associates of Richmond in Mechanicsville, Va., Tuesday, April 14, 2020. (Mark Gormus/Richmond Times-Dispatch via AP) THE ASSOCIATED PRESS BY ERIC KOLENICH, THE Richmond Times-Dispatch

RICHMOND, Va. (AP) — Dr. Jeff Brown's organs were on the brink of failure. The local vascular surgeon had tested positive for COVID-19, and after three days in the hospital his health was only getting worse. The oxygen level in his blood was low, a condition known as hypoxemia,

and respiratory failure was a serious concern.

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immune system reacts to disease in the lungs. Jones, it turns out, was in the perfect position to save his colleague's life.

providence that the man entrusted with Brown's well-being had spent years studying how the

The physician who treated Brown is a close colleague, Dr. Drew Jones. Maybe it was

THE ILLNESS On March 5, Brown flew to London to return his daughter to the U.S. from her semester abroad through New York University. He took precautions, wearing a mask on each flight and packing hand sanitizer in his bag.

He returned home the morning of Saturday, March 14, and when he entered the U.S. at the

Detroit airport he wasn't required to undergo an enhanced screening.

Before returning to work at Bon Secours' Memorial Regional Medical Center in Hanover County, he spoke with the administration and others to explain where he had traveled and when he would return. Many other doctors who had traveled recently went through the same process,

and Brown was cleared to return.

Any Bon Secours associate who is potentially exposed to the coronavirus is evaluated and monitored by the hospital network and the Virginia Department of Health, Bon Secours spokeswoman Jenna Green said. One other associate who worked directly with Brown did test positive, he said, though it's nearly impossible to know where anyone got the virus.

"We take this thing very, very seriously," he said. "It was a very fluid situation in mid-March."

He resumed work on Monday, March 16, and later that day the United Kingdom was added to a

travel restriction list, which took effect at 11:59 p.m. that night. Among those restrictions: Any

traveler returning from the U.K. would need to self-quarantine for 14 days. Having arrived just

On Friday, March 20, Brown began feeling ill. He had typical flu symptoms — fever, shakes, aches and pains — so he stopped working, visited his hospital's emergency room and was tested for the coronavirus. He went home and awaited the results.

His entire practice was shut down for two weeks. All 11 employees in the Vascular Surgery

Associates office in Hanover were sent home with pay. Each patient was contacted and

During the next week his condition didn't improve. His fever was unrelenting, his energy

depleted. He couldn't eat. On March 24, he returned to the emergency room and was admitted

Visitors weren't allowed during his stay so he kept his wife updated through phone calls and

FaceTime. He spent large portions of the day doing breathing exercises, and when medical

before the quarantine rule was enacted, Brown worked the entire week.

monitored. Every inch of the office was thoroughly cleaned.

to the hospital.

respiratory medicine.

THE TREATMENT

already knew — he was positive for COVID-19.

This can shut down organs and make recovery difficult.

called interleukin-6 or IL-6.

patients will begin this summer.

the tests came back negative.

the right buttons."

THE RECOVERY

staff members entered the room they spent minutes just donning personal protective equipment to safely treat him. The standard treatments were administered, including Plaquenil and azithromycin. Plaquenil is a brand of hydroxychloroquine, a drug typically used to treat malaria, rheumatoid arthritis,

lupus and other illnesses that President Donald Trump has lauded. Azithromycin is a common

Despite the medicine he was given, Brown's condition didn't improve. Over the next four days

his health deteriorated. Seven days after he was tested, results returned confirming what he

man was 67 and had been in good health, yet the coronavirus had caused him to suffer cardiac arrest, liver failure and shock. He had been given the normal treatment and the virus had still ravaged his body. Earlier this month the man died.

Jones, 48, knew a change of direction was needed for other patients. He thought back to the

years at the beginning of his career at VCU as a pulmonary and critical care fellow and faculty

member. There he researched how the immune system functions in the lungs. He had watched

how emphysema and asthma affected mice and rats. He knew that something needed to be

Jones, the pulmonologist who treated Brown, had already treated one COVID-19 patient. That

done earlier in the sequence of infection to save the lives of COVID-19 patients. There's a growing belief in the medical community that it isn't the coronavirus itself that kills a patient, but the patient's extreme inflammatory response. The immune system floods the cells with proteins called cytokines. When the body produces a rush of cytokines — known as a

cytokine storm — blood vessels become weak, allowing fluid to leak in and fill the lung cavities.

Jones compares the body's response to a forest fire. It's not too difficult to extinguish a match.

across the U.S. and in China. Roche, the Swiss maker of the drug, received \$25 million from the U.S. Biomedical Advanced Research and Development Authority last week to accelerate the drug's trial. The medicine is traditionally used to treat rheumatoid arthritis. Brown was in Stage II of the disease, about to cross the line into Stage III, in which the viral response gives way to a dangerous inflammatory response. The forest fire was about to ignite.

"It's like the puzzle you've been working on all your life and you finally get all the pieces and they fall into place," Jones said. "Which is amazing to me." Understanding the intersection of the body's immune system and its inflammatory system, Jones said, could be the "vital link" the health community has been missing for decades.

Decades of trials hoping to treat acute respiratory distress syndrome resulted in few answers.

There are drawbacks to using Actemra. It's expensive, costing between \$3,000 and \$5,000 per

dose, and its supply is limited. Much of what has been produced is delivered to New York and

haywire. The theories Jones had developed years ago as a fellow at VCU were being put to use

and the results were dramatic. Work he had begun years ago was culminating in this case.

So Jones infused the medicine in Stage II before Brown's inflammatory response went

Italy, where it is needed most.

Dr. Alpha "Berry" Fowler, a professor of medicine at Virginia Commonwealth University who runs the lab where Jones was a fellow. Fowler suggested the vitamin C.

A large amount of vitamin C is injected -4,000 to 5,000 times the normal amount in the bloodstream. Whether it was the timing of the Actemra, the vitamin C or the combination of medicines that saved Brown is unknown.

"There are a number of ways, I think, of getting at this virus," Fowler said. "Dr. Jones pressed

The drugs began to take their effect in Brown's lungs, binding with the proteins and preventing inflammation. The response was nearly instantaneous. In 45 minutes he began to feel a change. Within two hours his discomfort had subsided. His

Jones wrote up a case report detailing his treatment and the results. Bon Secours' protocols for treating COVID-19 have grown to at least 51 pages. Doctors are sharing what they've learned, some using Facebook to update one another. Other doctors heard of Jones' approach by word of mouth and they're starting to follow his lead.

he's cried as much in the past two or three weeks as he has in the past two or three decades. But Jeff Brown is a big reason for hope. "I'm incredibly grateful I got the care that I got, both from the shift-to-shift bedside nursing and staff and from my physicians," Brown said.

While Brown was required to wait 72 hours without a fever before he could return to work, he

delayed his return by an extra week. He was retested, as were all his family members, and all

His wife and daughter tested negative for the COVID-19 antibody, meaning they had never

contracted the virus despite riding the same trains and planes from London to the U.S.

"It'll be impossible for me to figure out where I got it," he said.

Not long after his release from the hospital he felt so healthy he started to work on his taxes. Copyright 2020 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed.

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But once the match has been dropped and the brush begins to burn and the fire spreads, the devastation is more extensive and the resources needed to stop the fire are more substantial. Jones thinks the treatment many COVID-19 patients are receiving needs to occur in an earlier stage. On March 27, he administered to Brown a medicine called Actemra, a brand of tocilizumab, which disabled Brown's inflammatory response by blocking specific cytokines Actemra hasn't been approved to treat the coronavirus but it has shown promising results

Jones prescribed one other unconventional treatment — intravenous vitamin C. He had called Vitamin C isn't an approved treatment for the coronavirus, either, and it isn't recommended by Bon Secours. But the playbook for treating COVID-19 is being written on the fly, and Fowler says there's a growing amount of anecdotal evidence that vitamin C might be effective in treating COVID-19. Fowler is hoping a clinical trial to approve the use of vitamin C in COVID-19

fever diminished and his heart rate slowed. On March 28, Brown received a second dose of Actemra. A day later, a Sunday, he felt well enough to go home. The day after that he did go home. In three days he had gone from his body almost being overrun by the disease to leaving the hospital. "I've never seen anybody recover as quickly as he did with that level of disease," Jones said.

Physicians like Jones are fighting the virus on two fronts, treating the patients in front of them while also studying the disease in hopes of being more prepared for the next patient. He says

By April 9, Brown was back in a health care setting, but instead of being treated he was seeing patients of his own. Soon he'll be able to donate his plasma and its antibodies to the American Red Cross.

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