

Long Shot COVID-19 Treatment Yields Fast, Promising Results Using Decentralized Trial Approach

Washington University in St. Louis Applies CTTI's Decentralized Clinical Trial Recommendations

SUMMARY

The Healthy Mind Lab at Washington University in St. Louis (WUSTL) wanted to find out if fluvoxamine, a commonly used medication for depression and anxiety, could help treat clinical deterioration from COVID-19. Given the high contagiousness of COVID-19, the research team decided to design a fully remote clinical trial. CTTI's Decentralized Clinical Trial (DCT) [recommendations](#) helped them navigate licensing requirements, recruitment, and other common challenges of DCTs.

GOAL(S)

While the race for COVID-19 treatments that prevent death (or vaccines to prevent infection entirely) dominated the headlines in 2020, another massive challenge of the pandemic was minimizing COVID-related hospitalizations. When an investigator at the WUSTL Healthy Mind Lab received a suggestion from a colleague to explore the potential of repurposing the common depression and anxiety medication fluvoxamine to prevent COVID deterioration, he was intrigued. The suggestion made sense; a [study](#) published a year earlier by researchers at the University of Virginia found fluvoxamine stopped sepsis, a runaway immune response in which inflammation gets out of control, damages organs, and can be deadly. It's believed a similar phenomenon occurs in COVID patients--but the idea was a long shot.

CHALLENGES

Still, a global pandemic demands exploration of every potential solution, so the Healthy Mind study team moved ahead with the improbable trial. But launching a study of fluvoxamine in the midst of a pandemic presented several challenges. First, nearly all of the Healthy Mind Lab's employees were considered non-essential and working from home. Second, COVID-19 infection is highly contagious, and when the study was in the design stage, no personal protective equipment was available. There was no feasible way to recruit patients into a trial and monitor them face-to-face.

SOLUTION(S)

The research team decided to design the fluvoxamine trial as a fully remote experience. However, having never conducted a DCT, the Healthy Mind Lab needed help navigating the logistics of taking the trial direct to participants. For example, state licensing requirements dictate that you have to be licensed in the same state as the patient to provide medication. They also sought best practices for getting medicines in the hands of participants and ensuring retention.

Fortunately, has worked to address the challenges to conducting DCTs through telemedicine and mobile healthcare providers. CTTI's team has explored several topics--including telemedicine state licensing issues, FDA review division reception, and Good Clinical Practice-related issues--and [created recommendations](#) to help advance widespread use of mobile technologies in DCTs. These recommendations provided a guide for the Healthy Mind Lab team as they launched their COVID-19 study of fluvoxamine.

TAKING ACTION

The study team rapidly recruited participants who had COVID-19 infection via electronic health records (EHR) in the EPIC EHR system. Potential participants underwent screenings by email and phone, and were provided electronic informed consent, never needing a face-to-face interaction. Even study supplies were delivered to self-quarantined study patients as a package left at their door. The study materials consisted of the medication, an oxygen saturation monitor, an automated blood pressure monitor, and a thermometer. Participants then self-assessed using the equipment provided and confirmed vital signs within range. Study staff called participants, informed them of eligibility, and instructed them to take the study medication. Data was collected by twice-daily [REDCap surveys](#) sent to patients via email, with phone-based data collection as backup to ensure that individuals without Internet access were able to participate. The surveys recorded oxygen saturation, vital signs, medication adherence, and COVID-19 symptoms.

This initial study only operated regionally (southern Illinois and eastern Missouri) due to concerns over the ability of FedEx and other national couriers to deliver study materials on time given the strain of the pandemic. CTTI's recommendations helped the study team understand considerations on approaches to protocol design for DCTs, state law requirements for direct-to-patient shipping, measuring outcomes remotely, and requirements for telemedicine implementation.

IMPACT

The trial was successfully launched in April 2020 and concluded in September 2020. Of the 80 COVID patients who were randomized with fluvoxamine, zero clinically deteriorated (versus six who deteriorated on placebo). These results were promising and exciting. However, although they demonstrated clinical and statistical significance, they would need to be replicated in order to demonstrate efficacy.

To that end, the Healthy Mind Lab started a second fluvoxamine trial at the end of December 2020, which recruited almost 700 patients nationally and in Canada in less than five months. For this trial, the team relied heavily on CTTI's recommendations around state licensing requirements, which were in a state of flux during the pandemic. In order to navigate the emergency of COVID-19 effectively, more than 30 states had relaxed their telemedicine and interstate prescribing rules, and CTTI's guidance served as a resource to help the study team identify where to get the latest parameters.

ADVICE

Times of crisis often require us to push ourselves and embrace innovations we otherwise would have not explored. In the

case of the WUSTL Healthy Mind Lab, using a DCT approach was the only way to rapidly explore fluvoxamine's potential, and it turned out the rapid and unorthodox approach had a meaningful impact on patient lives. For example, when a COVID outbreak in Golden Gate Fields thoroughbred horse training facility infected 200 people in the community, the community racetrack doctor recalled a webinar on the study team's preliminary fluvoxamine results. The doctor prescribed fluvoxamine to the infected community members who wanted it. Of those who declined, 12.5 percent were hospitalized. In the group taking fluvoxamine, none were hospitalized.

The COVID-19 study has also changed the academic research team's view of DCTs. While they once believed the loss of face-to-face participant interaction would have negative outcomes on precision, the team actually found precision to be higher in their study than in a traditional design. That's because home monitoring can be accomplished much more frequently than waiting for a clinic assessment. The team captured rich insight on the timeline of deterioration they would otherwise have missed. The Healthy Mind Lab investigator believes that post-COVID, DCTs will be seen as a necessary innovation much more widely embraced by regulators and the clinical research community at large.

ORGANIZATION

Washington University in St Louis

CONTACT

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ORGANIZATION TYPE

Academia

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2020

TOPIC

Decentralized Clinical Trials

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CTTI RESOURCES

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ADDITIONAL RESOURCES

[60 Minutes: Finding a possible early treatment for COVID-19 in a 40-year-old antidepressant](#)

[Fluvoxamine vs Placebo and Clinical Deterioration in Outpatients With Symptomatic COVID-19: A Randomized Clinical Trial](#)

[Doctors test popular anti-depressant to see if it fights off Covid-19](#)

[Can a common antidepressant help in the fight against COVID-19?](#)

[The antidepressant fluvoxamine could keep mild COVID-19 from worsening: A real-world study and data from animal and cell studies confirm earlier clinical trial results](#)