

Insights on operationalizing COVID-19 monoclonal antibody treatment

March 26 2021



IV bags containing monoclonal antibody treatment at a UPMC infusion center.
Credit: UPMC

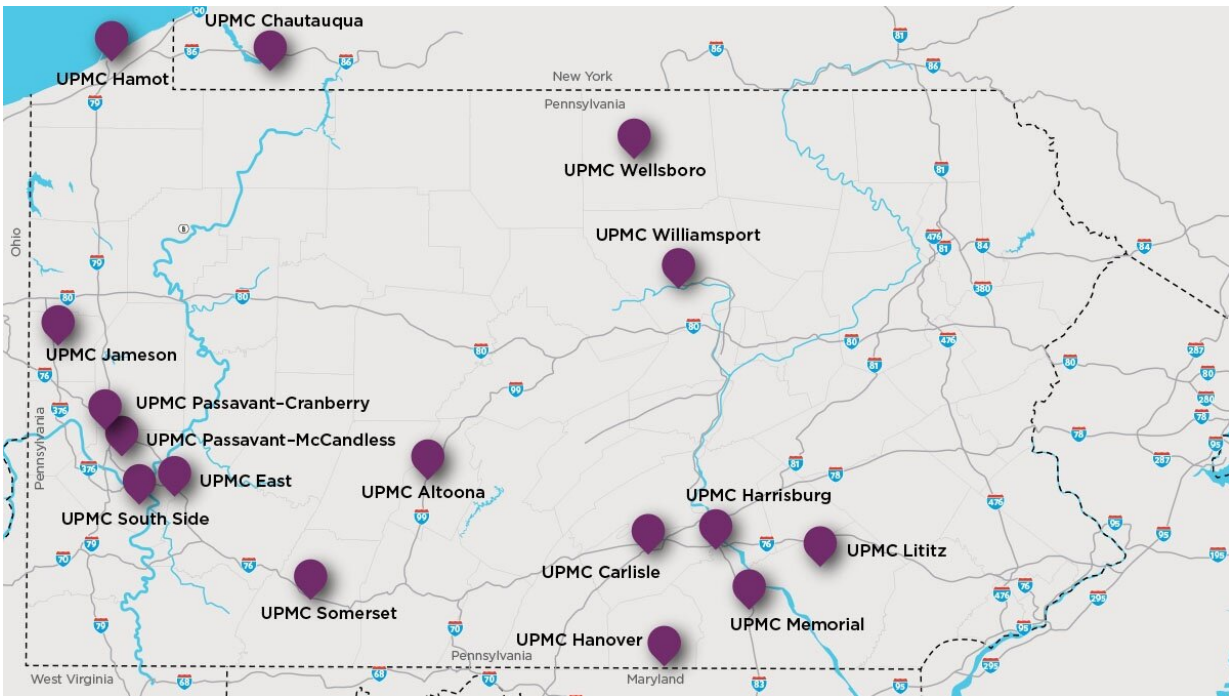
As evidence mounts supporting the use of monoclonal antibody treatment to reduce hospitalizations and deaths from COVID-19, UPMC and University of Pittsburgh School of Medicine physician-scientists are sharing the health system's experience administering the life-saving medication.

In a report published today in the scientific journal *Open Forum Infectious Diseases*, the UPMC/Pitt team shares how it quickly established the largest and most equitable distribution network for COVID-19 monoclonal antibody infusions across Pennsylvania. The team today also reported preliminary results confirming the treatment reduced likelihood of hospitalization and death in UPMC patients who received it.

"When administered soon after infection, this treatment can help certain people fight the virus and keep them from progressing to serious illness and death," said Ryan Bariola, M.D., associate professor in Pitt's Division of Infectious Diseases and director of the UPMC Community Hospital Antimicrobial Stewardship Efforts (CHASE) Program. "But administering these infusions comes with logistical challenges, so many health care providers opt not to offer the treatment. UPMC overcame these challenges, and we're dedicated to sharing what we learned with other medical centers, clinicians and the public."

Monoclonal—"mono" means "one" and "clonal" means "copy"—antibodies are a type of medication that seeks the COVID-19 virus in a person's body and blocks it from infecting their cells and replicating. Since late 2020, the U.S. Food & Drug Administration has granted Emergency Use Authorization (EUA) to three monoclonal antibody treatments—one from Regeneron and two from Eli Lilly—which are given through a one-time IV infusion. This is the same type of emergency authorization given to the COVID-19 vaccines being administered in the U.S.

This therapy is most helpful when given early, especially within 10 days of infection in people at highest risk of complications from COVID-19.



UPMC gives monoclonal antibody infusions at 16 fixed locations, as well as in some Emergency Departments, long-term care facilities and at patient's homes. Credit: UPMC

The U.S. supply of monoclonal antibodies is taxpayer-funded and given without charge to the institutions that administer it. Preparing for high patient demand, UPMC created a weighted lottery to ensure fair allocation of its supply. However, demand was never high enough to trigger use of the lottery.

"This lower use surprised us, and we're still debating why demand was less than expected," said co-author Donald M. Yealy, M.D., UPMC chief

medical officer and professor and chair of Pitt's Department of Emergency Medicine. "It likely had to do with so few [health care providers](#) investing in the infrastructure, staff and processes needed to administer the drug. This created lower awareness among both patients and clinicians about the life-saving benefits of monoclonal antibodies."

Initially, eligibility was limited to patients 65 years or older, or to those with a body mass index of at least 35 because those were the people studies had indicated were most likely to benefit. UPMC has since expanded eligibility to younger people with certain medical conditions that place them at higher risk for complications from COVID-19, including children, in compliance with the EUA.

To date, UPMC has treated more than 1,000 patients with monoclonal antibodies at 16 sites across the communities it serves in Pennsylvania and New York. It also provides home infusion services when needed. UPMC ensures that all proper infection prevention protocols are followed, and specifically prevents COVID-19 patients from mixing with other patients at the infusion centers.

"Monoclonal [antibodies](#) are a crucial part of the COVID-19 treatment spectrum, bridging the gap between [preventive measures](#)—such as masks, social distancing and vaccination—and the various therapies for hospitalized COVID-19 patients," said senior author Mark Schmidhofer, M.D., professor of medicine at Pitt and medical director of UPMC's Coronary Intensive Care Unit. "It's a potentially life-saving option and can keep people out of the hospital if prevention fails."

More information: J Ryan Bariola et al. Establishing a Distribution Network for COVID-19 Monoclonal Antibody Therapy Across a Large Health System During a Global Pandemic, *Open Forum Infectious Diseases* (2021). [DOI: 10.1093/ofid/ofab151](https://doi.org/10.1093/ofid/ofab151)

Provided by University of Pittsburgh

Citation: Insights on operationalizing COVID-19 monoclonal antibody treatment (2021, March 26) retrieved 27 April 2024 from <https://medicalxpress.com/news/2021-03-insights-operationalizing-covid-monoclonal-antibody.html>

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