

# Weighted "lottery" provides greater access to scarce COVID-19 medications

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A weighted "lottery" designed to increase access to the antiviral drug remdesivir during the May-July 2020 COVID-19 surge for those most affected by the coronavirus, including members of the Black, Latinx and indigenous communities, led to more equitable distribution of the badly needed medication, according to research presented at the ATS 2021 International Conference.

At a time when supplies of COVID-19 medications were scarce, Douglas B. White, MD, MAS, vice chair and professor of critical care medicine, UPMC endowed chair for ethics in critical care medicine and director of the Program on Ethics and Decision Making in Critical Illness, University of Pittsburgh School of Medicine, and colleagues, convened a multi-institution consortium of experts to develop a weighted lottery, in which some patients would be given higher priority for receiving remdesivir while others would be given lower priority.

Consortium members had expertise in bioethics, economics, [health disparities](#), medicine, pharmacy and health law. They assigned more weight to patients from disadvantaged communities and

essential workers, and less weight to patients expected to die within a year from a terminal condition and those with severe respiratory failure.

The lottery was implemented at 23 hospitals across the UPMC health system during periods of drug shortage. The team identified eligible patients using an electronic health record- and telephone-based screening system. They calculated the number of potentially eligible patients each week, based on the number of patients who were eligible the previous week. Using the weighting system previously described, a drug allocation team met each day to determine each eligible patient's chance of receiving the drug, and then used a [random number generator](#) to run the lottery.

Overall, 61 percent of the available remdesivir was allocated to patients who were from disadvantaged neighborhoods and/or were essential workers. These individuals made up 56 percent of the COVID-19 patient population.

"We showed that in the maelstrom of a pandemic it is possible to deploy an organized allocation strategy that promotes both equity and clinical benefit," said Dr. White.

"This is a major improvement over the first-come, first-served approach that many hospitals have used; that approach is likely to worsen disparities for those with access-to-care barriers. Among those most affected would be persons with disabilities that limit their mobility and those without health insurance, who may delay seeking care due to financial concerns."

He noted that the weighted lottery also allows planners to give priority to certain groups, such as those who are most likely to benefit and those who have been disproportionately affected by the pandemic, such as individuals from hard-hit communities.

"It was our goal from the outset to develop a framework and process that any hospital can use," stated Dr. White. The team also developed a detailed protocol that describes the steps to carry out the lottery, which can be found here.

The researchers concluded that it is best to implement the lottery on a centralized, regional level, rather than hospital-by-hospital. "It is far more efficient to conduct one lottery for many hospitals than have each hospital conduct its own lottery. This approach can simultaneously accomplish fair allocation and rapid learning, because the lottery creates a natural experiment in which some patients receive the scarce drug while others do not. Researchers can use the [lottery](#)'s registry to assess the effectiveness of the [drug](#)."

**More information:**

[conference.thoracic.org/progra ...  
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