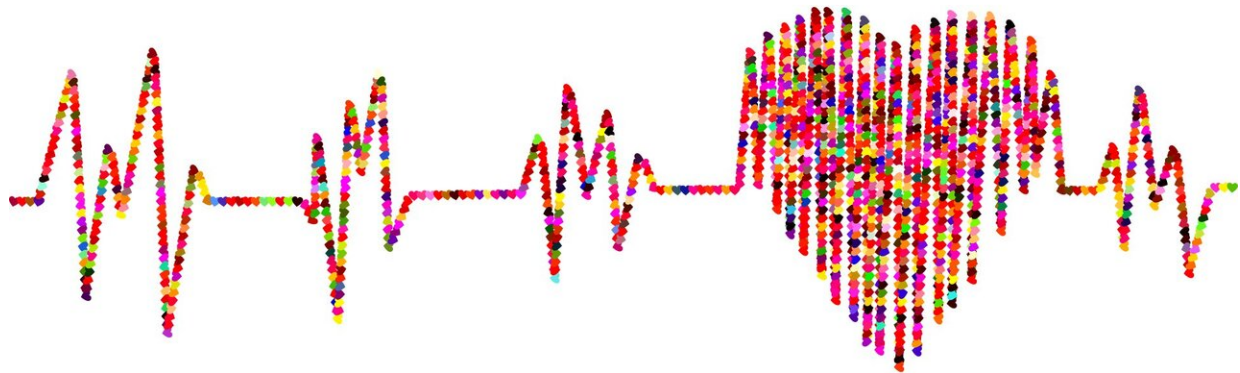


Remote blood pressure management program enhanced care during pandemic, finds research

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Hypertension is the leading risk factor for death worldwide. During the COVID-19 pandemic, routine blood pressure assessments decreased because of global disruptions to medical care delivery.

However, new research has found that a remote [hypertension](#) program, operated by Mass General Brigham since 2019, successfully supported

[patients](#) through the [pandemic](#) in achieving their blood pressure goals, with patients who enrolled during the pandemic reaching and maintaining their goal blood pressures an average of two months earlier than in the pre-pandemic period.

The results, published in *Journal of the American Heart Association*, demonstrate the potential for remote programs to provide more effective and equitable care for hypertension, as well as other chronic conditions.

"There are over 110 million patients with hypertension in the U.S. During the pandemic, there was a dramatic decline in the number of patients who had their blood pressure measured, and we even saw a small nationwide increase in blood pressure," said corresponding author Naomi Fisher, MD, of the Division of Endocrinology, Diabetes and Hypertension at Brigham and Women's Hospital.

"Our remote management program at Mass General Brigham was already established pre-pandemic, so it was primed to help take care of our patients with [high blood pressure](#). This program was able to provide care when patients needed it most, and demonstrated the efficacy of a team-based, entirely remote management system."

The study included participants from the remote cardiovascular health program, an umbrella of programs that enrolled patients from the Mass General Brigham system. A total of 1,256 program participants were included in the study, with 605 enrolled in the program during the six months before the March 2020 pandemic shutdown and 651 enrolled during the six months after March 2020.

Critically, more pandemic-era enrollees were from traditionally underserved patient populations: the proportion of non-white patients increased by almost 60 percent during the pandemic, and the proportion of non-English speaking patients increased more than five-fold.

Participants received a digitally connected home blood pressure monitor, which enabled them to collect a fuller and more accurate set of measurements than those obtained in office visits. An evidence-based clinical algorithm, [previously described](#) by the researchers, analyzed home blood pressure recordings and guided pharmacological decision-making, with trained patient navigators, pharmacists and supervising physicians working together to implement a therapeutic strategy with each patient.

Both prior to the pandemic and in the six months after March 2020, the mean baseline home blood pressure was roughly 140/81 mm Hg. In both groups, blood pressures fell by approximately 16/9 mm Hg among those who continued the program—a magnitude of reduction in [systolic blood pressure](#) associated with a remarkable 40 percent relative risk reduction in major cardiovascular events and all-cause mortality.

During the pandemic, the researchers adapted the clinical algorithm to accommodate patients' needs. With fewer patients able to have blood testing done at a lab, [calcium channel blockers](#) were prescribed more frequently than angiotensin receptor blockers or angiotensin-converting enzyme inhibitors, which necessitate lab testing as patients adjust to new dosages.

During the pandemic, engagement in the program also increased, as measured by an increase in the average number of monthly home blood pressure recordings (from 19 to 32) and calls between patients and navigators (from 3 to 8).

The authors note that the program continues to encounter some challenges: adherence to hypertension treatments is notoriously difficult, and roughly one third of patients who enrolled in the program did not complete it. Thus, only half of all initially enrolled patients reached blood pressure goals. Within this group, however, rates of achieving goal

blood pressure improved to 94.6 percent during the pandemic from 75.8 percent pre-pandemic.

The researchers are developing the Hypertension Plus (HTN-PLUS) program to specifically aid patients with resistant hypertension who continue to have uncontrolled [blood pressure](#) despite maximum tolerated doses of at least three anti-hypertensive medications, including a diuretic. Going forward, they are also working to scale the remote management program beyond metropolitan Boston.

"Remote hypertension management programs are part of a growing landscape of digital health care that may transform delivery of care for hypertension as well as other chronic diseases like obesity, heart failure, diabetes and depression," Fisher said. "Successful programs that engage providers and patients in a meaningful, structured way have the potential to provide dramatic benefits in global cardiovascular health."

More information: Naomi Fisher et al, Remote Cardiovascular Hypertension Program Enhanced Blood Pressure Control During the COVID-19 Pandemic, *Journal of the American Heart Association* (2023). [DOI: 10.1161/JAHA.122.027296](https://doi.org/10.1161/JAHA.122.027296)

Provided by Mass General Brigham

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