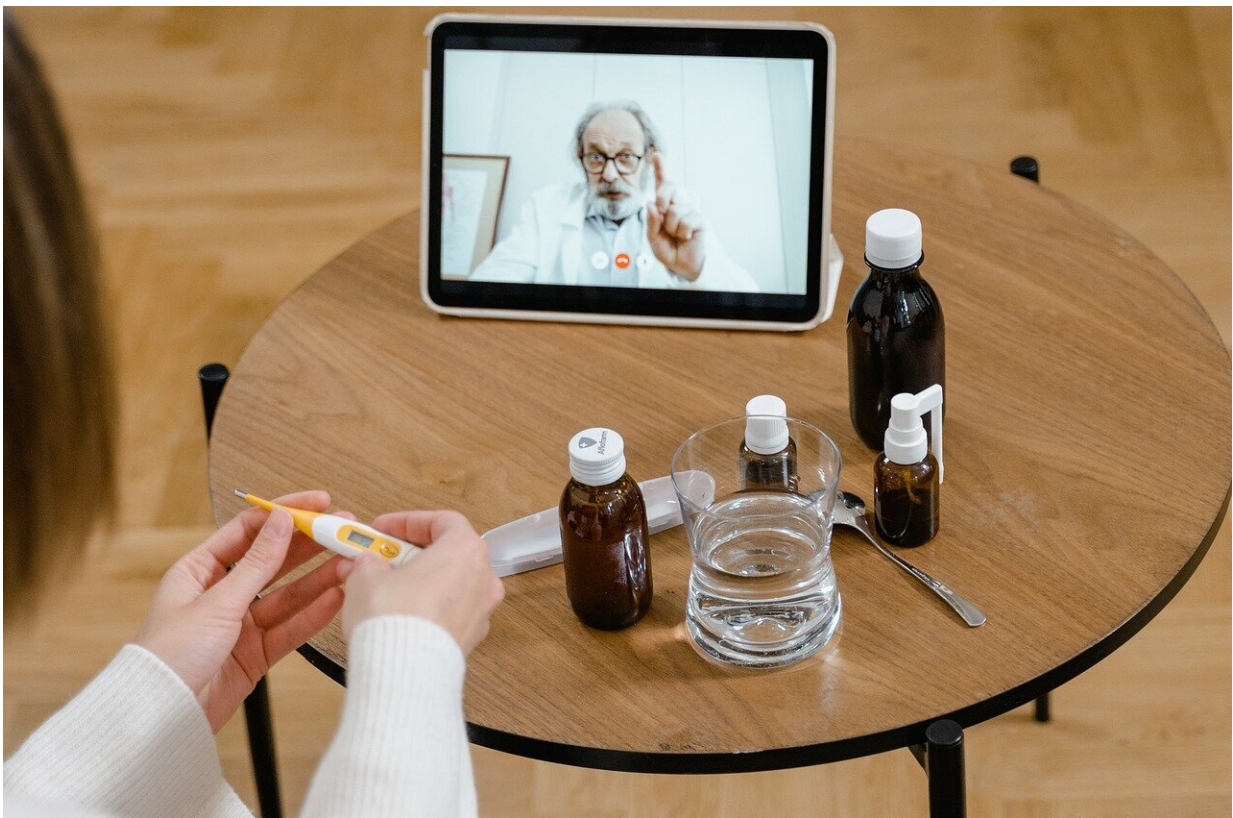


# Remote health care delivery program improves blood pressure and cholesterol levels

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Heart disease is the leading cause of death in the United States and around the world. Lowering high blood pressure and cholesterol could

help to reduce morbidity and mortality, but frequent in-person visits to measure and manage these readouts can be a burden for patients.

A team from Mass General Brigham implemented a remote health care program aimed at managing patients' blood pressure and [cholesterol levels](#). The new program leveraged digital solutions to help break down barriers to care, especially among traditionally underserved patient populations.

In a research study that included more than 10,000 participants from the Mass General Brigham system, investigators found that the program lowered blood pressure and LDL-cholesterol significantly. Results are published in *JAMA Cardiology*.

"Coming into a brick-and-mortar office can present a high burden for patients who have chronic conditions or for people who live far away," said corresponding author Benjamin Scirica, MD, MPH, of the Division of Cardiovascular Medicine at Brigham and Women's Hospital, a founding member of Mass General Brigham.

"We began this remote care delivery program before the pandemic began. And when the pandemic started, we saw a significant increase in our enrollment and a greater interest in the advantages of remote care. Patients want innovative solutions to more easily engage with the [health system](#). Our program provides strong evidence that remote care can work and can make a difference in patients' lives."

Health care delivery strategies and interventions for controlling [high blood pressure](#) and high cholesterol can vary greatly in terms of accessibility and quality, and these differences can exacerbate disparities in care. Previous studies have found that by age 55, 3-out-of-4 Black adults have developed hypertension compared to about half of white men and 40 percent of white women. Remotely delivered programs for

cardiovascular care have the potential to offer greater access to equitable and high-quality care.

Advances in health care technology have made it possible to offer many health care treatment options to patients in their home rather than requiring office or hospital visits. The hypertension and cholesterol optimization program fits into Mass General Brigham's larger efforts to transform health care delivery by helping patients access services and monitor health from home, especially at a time when hospital capacity is at a tipping point.

"This study is one of the largest, if not the largest clinical implementation study in a health network," said lead author Alexander Blood, MD, MSc, also of the Division of Cardiovascular Medicine at the Brigham.

"We meet patients where they are. We communicated with them and co-managed their health through the channels they preferred, including patient portals, text, email, or phone calls. This is how we imagine adapting many more of our systems in the future to meet patient needs."

Over the past five years, Blood, Scirica and a team at Mass General Brigham have developed a series of remotely delivered chronic disease management programs. The programs, staffed by trained but non-licensed navigators and licensed pharmacists, are backed by the professional staff of the Mass General Brigham health care system. They use digital solutions such as digitally connected home blood pressure cuffs to adjust medications based on the patient's response to therapy.

To study the effectiveness of the intervention, the research team enrolled participants, provided education, and sent home blood pressure monitoring devices, which automatically sent the blood pressure results back to the program. This program was delivered to over 10,000 patients

across dozens of clinics and hundreds of practices in the system.

The researchers found that with intentional planning and care, they were able to improve health outcomes, provide consistent care and reach underserved populations. The team saw positive outcomes, including reductions in high blood pressure and improvements in cholesterol levels across a large and diverse group of people. The lipid program enrolled 8,103 participants and the hypertension program enrolled 3,658 participants.

Over 424,000 blood pressure readings and 139,000 laboratory reports were collected in the program. The average systolic blood pressure reduction was 9.7 mmHg in patients enrolled in the hypertension program and the average cholesterol reduction was 37 mmHg. Similar rates of enrollment and reductions in [blood](#) pressure and cholesterol were observed across different racial, ethnic, and primary language populations.

Scirica explains that managing hypertension and high cholesterol levels could help to reduce cardiovascular events like heart attacks and strokes, and alleviate downstream [health care costs](#), but future studies to assess the financial effects of the program are needed.

As is the case in many clinical programs, many patients did not fully complete the program—276 patients dropped out of the hypertension program and 817 dropped out of the lipid program. The team notes that further research on engagement strategies, incentives, and interventions are needed to improve levels of retention.

Overall, the researchers concluded that the program successfully demonstrated a standardized, sustainable, and remote approach to effectively lower and maintain improved levels of [blood pressure](#) and cholesterol.

"When we look at clinical practice both locally and nationally, we see a lot of patients not receiving the most up-to-date therapies," said Blood. "We need to initiate programs that produce solutions and overcome barriers for historically underserved patients."

**More information:** Alexander J. Blood et al, Results of a Remotely Delivered Hypertension and Lipid Program In More than 10,000 Patients Across A Diverse Health Care Network, *JAMA Cardiology* (2022). [DOI: 10.1001/jamacardio.2022.4018](https://doi.org/10.1001/jamacardio.2022.4018)

Provided by Brigham and Women's Hospital

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