PROJECT INFORMATION

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Comparing the Effectiveness of Home, Clinic, and Kiosk Blood Pressure Checks for Diagnosing High Blood Pressure -- The BP-CHECK Study

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Organization

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What was the research about?

Because high blood pressure has no symptoms, a correct diagnosis is important for getting treatment to prevent strokes, heart attacks, or other future health problems. To diagnose high blood pressure, medical guidelines recommend wearing a monitor at home that checks patients' blood pressure over 24 hours. But doctors rarely suggest this approach.

In this study, the research team wanted to learn if other methods to check blood pressure worked as well as the 24-hour monitor to diagnose high blood pressure. The team compared the 24-hour monitor with three methods:

- **Clinic.** Patients returned to the clinic once and staff checked their blood pressure.
- **Home.** For five days, patients took their blood pressure at home, twice in the morning and twice at night.
- **Kiosk.** For three days, patients took their blood pressure three times, a minute apart, at a kiosk in a clinic or pharmacy.

The research team also looked at patient health outcomes after six months.

What were the results?

Overall, the home method had the best results:

- The home and kiosk methods had more accurate readings than the clinic method. The clinic method missed high blood pressure more than half of the time.
- At home, more patients checked their blood pressure as planned than at the clinic or kiosk.
- Patients preferred checking their blood pressure at home to the clinic or kiosk.

After six months, across the three methods, patients had lower blood pressure. Patients didn't differ in how much their blood pressure went down, changes in their physical health, or whether they made lifestyle changes like eating less salt.

Among patients with high blood pressure according to the 24-hour monitor, only 40 percent had the diagnosis recorded in their health record six months later.

Who was in the study?

The study included 510 patients receiving care at one of 12 clinics in Washington State. Among patients, 80 percent were White, 7 percent were African American, 13 percent were another race, and

4 percent were Hispanic. The average age was 59, and 52 percent were men.

What did the research team do?

The research team identified patients who had high blood pressure at their last clinic visit based on health records. They enrolled patients who still had high blood pressure at the first study visit and assigned them by chance to one of the three methods. After three weeks, patients wore the 24-hour monitor. The team compared the results from each method with the results from the 24-hour monitor.

Patients completed surveys at the start of the study, before and after wearing the 24-hour monitor, and six months later.

Patients, doctors, and other experts in measuring blood pressure helped design the study.

What were the limits of the study?

The study took place in one healthcare organization. Most patients were White. Results may differ for other patients.

Future research could test ways to increase use of the home method to diagnose high blood pressure.

How can people use the results?

Health systems and doctors can use the results when considering ways to diagnose high blood pressure.

To learn more about this project, visit www.pcori.org/Green372.