Health Impact Statement

Facilitate Use of Self-Measured Blood Pressure (SMBP) With Clinical Support Among Adults With Hypertension

Problem

Cardiovascular disease is a highly prevalent chronic condition that affects millions of individuals. Cardiovascular disease is the leading cause of death in the United States and accounts for approximately 1 in every 3 deaths.[1,2] In Rhode Island (RI), more than half of the adult population (55.8%) has at least one chronic disease, including cardiovascular disease, and more than 1 in 4 adults have multiple chronic diseases.[3]

Despite the increasing health threat cardiovascular disease presents to thousands of Rhode Islanders, control of key cardiovascular disease risk factors remains poor. According to the Centers for Disease Control and Prevention (CDC), one of the major risk factors for cardiovascular disease is hypertension (high blood pressure).[4] The prevalence of high blood pressure has steadily increased throughout the years. In 2017, approximately 1 in 3 (33.1%) Rhode Islanders reported ever being diagnosed with hypertension, compared to 22.9% in 2000, with the prevalence significantly higher among those below 400% of the federal poverty level (37.7%).[5,6] Of those diagnosed with hypertension, 19% reported that they were not taking their blood pressure medication as prescribed.[5]

According to the CDC, many people may not know they have high blood pressure because there are usually no warning signs or symptoms of the condition.[7] Regularly measuring blood pressure can help healthcare professionals diagnose and monitor hypertension.[7] One method to do so is self-measured blood pressure (SMBP) monitoring, which includes using a personal blood pressure measurement device in a non-healthcare setting, usually at home.[7] The American Heart Association recommends SMBP for all people diagnosed with high blood pressure to monitor the condition and help healthcare professionals determine whether treatments are working.[8] Research has shown that hypertensive patients using SMBP, in combination with support with their care team, are more likely to lower their blood pressure compared to patients who do not use it.[7]

Intervention

The Rhode Island Diabetes, Heart Disease, and Stroke Program's (RIDHDS) response efforts focused on two main outcomes: 1) Increase engagement in self-management among patients with high blood pressure and elevated blood pressure without a diagnosis of hypertension; and 2) Increase community clinical links that support systematic referrals, self-management, and lifestyle change for patients with high blood pressure. RIDHDS focused on partnering with and supporting SMBP in RI's Federally Qualified Health Centers (FQHCs) and free clinics since the patient populations of these practices are disproportionately people of color and low income. In addition, these practices are primarily based in health equity zones. Nearly all health equity zones have very high rates of families living below 400% FPL. As a result, RIDHDS anticipated that targeting resources in those areas was the most effective and equitable way of addressing hypertension monitoring and management. Through funding provided by CDC, RIDHDS implemented the following strategies and activities to facilitate use of SMBP among adults with hypertension:

- Contract with healthcare organizations that are part of Care+Community+Equity (CCE) initiative to conduct SMBP quality improvement projects;
- Support CCE sites with resources, practice facilitation, and technical assistance and training needs, with help from a partnership with Care Transformation Collaborative of RI (CTC-RI) and Advocates for Human Potential;
- Convene CCE sites for Best Practice Sharing meetings;
- Use SMBP data to foster best practice sharing and inform decision making for workplan and scope of work activities;
- Partner with the RI Health Center Association for weekly newsletter dissemination and Best Practice Sharing meeting co-chair support;
- Partner with American Heart Association to collaborate on their ambulatory programs and provide trainings, webinars, and needed assistance with blood pressure cuffs and SMBP

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Health Impact

In five years, RIDHDS and its partners put tremendous effort into facilitating the use of SMBP among adults with hypertension and elevated blood pressure without a diagnosis of hypertension. CCE practices participated in and developed SMBP quality improvement projects each year for the monitoring and management of hypertension. The projects evolved from year to year, with some practices building upon the previous year's project and/or increasing the percent or number associated with their goals. A few examples of the projects undertaken by the practices are below:

- One practice conducted outreach to patients who received loaner blood pressure cuffs to ensure engagement in data collection and reporting, provided staff with continuing education, offered SMBP patient education, and reviewed healthcare professional-specific data.
- One practice aimed to increase the number of patients engaged in SMBP by at least one non-physician team member. The identified patients had uncontrolled hypertension, undiagnosed hypertension, or hypertension in control.
- One practice tested the application of text messaging alongside participation in SMBP to promote patient engagement in the program and lifestyle change.

The number and percent of patients within healthcare systems that have policies or systems in place to encourage SMBP for those with hypertension has fluctuated over the past few years. From 2018 to 2023, the number of patients receiving care from the practices increased from 38,100 to approximately 46,300. The increase may be attributed to changes in the number of healthcare practices that contracted with CCE for SMBP, increased patient panel sizes in recovery from the COVID-19 pandemic, or a combination of these factors. Although reach may seem small when compared to the overall RI adult population, RI has been successful in helping the identified priority population and working with FQHCs and free clinics to address chronic disease disparities.

In 2021, there were an estimated 341 patients that reported SMBP readings to healthcare professionals. The number of patients increased to 373 in 2022 and approximately 513 in 2023. Data on patient engagement, hypertension control, and undiagnosed hypertension pre- and post-SMBP quality improvement projects fluctuated and varied by year and practice site. Regarding patient engagement, there were sites that experienced steady participation while others experienced decreased or fluctuating participation. For example, one practice had consistently high participation, reporting between 90-100% each year. In contrast, another practice exhibited a significant decrease followed by recovery, reporting 78% in 2019, 28% in 2021, and 48% in 2023. For most practices, there were slight to significant decreases in hypertension control rates during the COVID-19 pandemic, which resulted in RIDHDS adjusting the target from 75% to 65% control. A few practices were able to keep their hypertension control rates consistently high, whereas others struggled. For example, one practice experienced a significant decline from 80% in 2019 to 35% in 2021 but then displayed an increase in hypertension control to 70% in 2023. Practices also experienced fluctuations in undiagnosed hypertension. For example, one practice reported hypertension control rates that ranged from 1.7-10.5%. In some cases, the denominators of patients with hypertension fluctuated from low to high numbers which may have contributed to the increases or decreases in the percentages.

The COVID-19 pandemic and its associated challenges were barriers to facilitating the use of SMBP among adults with hypertension and may have contributed to the fluctuations in the data measures. It was difficult for healthcare professionals to prioritize SMBP and establish a blood pressure monitor loaner program during the pandemic. The practices noted that patients often did not return the blood pressure cuffs and that there were difficulties with training patients on SMBP. In addition, the practices initially did not have guidance for cleaning the cuffs and expressed concerns regarding the accuracy of calibration. The absence of a standardized measure for patient engagement was also a consistent obstacle for data tracking and analyzing. Lastly, there were declines in hypertension control rates throughout the pandemic as a result of missed blood pressure readings and lack of in-person medical visits.

References

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