Heart disease remains the leading cause of death in South Dakota and across the globe.

As part of the ever-evolving healthcare environment, service delivery options continue to expand and physicians and other practitioners must continuously look for new and innovative ways to provide care. Not only must their medical needs be met, it has become increasingly important for disease management to fit easily into patients’ lifestyles, aligning with their personal goals and allowing for engagement where they are - physically, mentally, etc.

It is well established that factors such as increased age, race, sex at birth, smoking, elevated lipids (cholesterol), high blood pressure, and diabetes can increase a patient’s cardiovascular disease risk and risk of having a heart attack or stroke. To address some of these factors during the 1815 Year 4 project period (July 1, 2021-June 30, 2022) the Cardiovascular Risk Reduction Program (CVRRP) was designed. Overall goals of the program included lowering cardiovascular risk in South Dakota residents by addressing both elevated lipid levels and hypertension.

The Community Pharmacy Enhanced Services Network of South Dakota (CPESN SD) first implemented a hypertension management program (HMP) in 2019 within multiple pharmacies across the state, allowing for pharmacy staff to work with patients in meeting their blood pressure goals. As part of the HMP, participants completed an ASCVD (atherosclerotic cardiovascular disease) risk assessment which calculated their 10-year risk of having a cardiovascular incident, such as a heart attack or stroke. Additionally, participants received an initial 90-minute education session where they established a baseline blood pressure as well as a blood pressure goal, discussed electronic care planning and course of treatment, received blood pressure goal counseling and lifestyle and behavioral modification recommendations, and completed a medication reconciliation with their pharmacist. Throughout the program, the pharmacist worked directly with additional healthcare team members to obtain appropriate medication therapy as needed. In addition to the initial education session, participants received a blood pressure monitor for checking their blood pressure at home and received instruction on proper blood pressure measurement technique and how to document their readings. Participant progress was electronically documented for health record exchange with their healthcare team members as appropriate. Bimonthly care calls were completed by pharmacy staff to obtain readings, discuss medication adherence, treatment progress, other pertinent healthcare information, and update goals. A final ASCVD risk assessment was done at the patient’s completion of the program to assess their overall progress and success.

Cholesterol, another common risk factor of heart disease was addressed through CPESN SD’s cholesterol management program (CMP) this past year. Participants received the same screenings, education, and services as with the HMP, but tailored to their cholesterol levels instead of blood pressure readings. The pharmacies utilized recent cholesterol labs from the clinic or tested cholesterol levels within the pharmacy as needed.

Each CPESN participant had the option of enrolling in the HMP, CMP, or both, based on their risks.
Throughout Year 4 (June 30, 2021-June 29, 2022), 40 individuals enrolled in the hypertension program, three enrolled in the cholesterol program, and 14 enrolled in both. Upon enrollment, participants had an average 17.32% 10-year risk of having a cardiac event, based on their ASVCD score, with that risk dropping to an average of 12.58% upon program completion. For participants of the hypertension program, an initial systolic blood pressure (top number) of 152.55 mm Hg dropped to 125.77 mm Hg upon program completion with a diastolic blood pressure (bottom number) of 89 mm Hg dropping to 74.86 mm Hg upon completion. Cholesterol program participants started with an average total cholesterol of 179.71 mg/dL and finished with an average of 166.83 mg/dL. Their low-density lipoprotein (LDL), or “bad cholesterol,” went from 94.52 mg/dL to 83.50 mg/dL and their high-density lipoprotein (HDL), or “good cholesterol,” went from 50.50 mg/dL to 53.33 mg/dL upon program completion.

**Results**

**Pharmacist Quotes**

Byron Olson, PharmD at Roger’s Pharmacy (Yankton) stated, “As pharmacists, we are very grateful to be part of such an impactful program.”

Chintal Gunvantbhai, PharmD at Shane’s Pharmacy (Ft. Pierre) stated, “I feel as pharmacists we are well positioned in the community to help these patients identify high blood pressure readings, make referrals if appropriate, and assist in managing high blood pressure. Pharmacists can help patients develop strategies to control, treat and/or prevent high blood pressure. We can also offer the relevant support and provide collaboration with the providers to help patients reach their treatment goals.”
Success at Roger’s Pharmacy

Roger’s Pharmacy (Yankton, SD): One of the patients participating in the HMP through Roger’s Pharmacy in Yankton, had a starting blood pressure of 170/68 mm Hg. She did not exercise or follow any dietary restrictions at the time of enrollment. Since the initial education session and as a result of interventions implemented during her enrollment, she was able to reduce her average blood pressure reading to 116/62 mm Hg with no low blood pressure side effects. Additionally, she began exercising three times per week, watching her diet carefully, and taking her blood pressure measurements twice daily for ongoing monitoring. This participant reported she was able to take better control of her health and expressed much appreciation for this program.

Success at Brother’s Pharmacy

Brother’s Pharmacy (Brookings, SD): One of the patients participating through the HMP at Brother’s had a starting blood pressure of 148/84 mm Hg and ASCVD risk score of 1.9%. The pharmacist reviewed with him his normal diet and found it consisted of mainly fast food, pizza, some alcohol, and other fatty and salty foods. The participant rarely ate at home and when he did, it was frozen food out of a box. Working construction allowed him to meet his activity and exercise recommendations at work most days. So, the pharmacist discussed ways to improve blood pressure starting with diet and salt intake. The participant was given educational materials to take home and when they next met, relayed he had been watching what he was eating and trying to pick foods that were lower in salt. He had also cut out adding salt to his food resulting in his blood pressure average decreasing to 133/77 mm Hg after approximately two months. At the end of the following month, his average was at 126/77 mm Hg, where it stayed for the remainder of his enrollment. This individual was able to reach his goal with lifestyle changes and did not need to incorporate additional medications for blood pressure management.

Next Steps

Although new cardiovascular patients do occasionally present to pharmacies, recruitment of participants started to become more difficult as the project period progressed. Throughout 2022-2023, CPESN SD and the Heart Disease and Stroke Prevention Program (HDSPP) will continue partnering to address this problem. In order to target additional participants, pharmacists will begin recruiting community members by meeting residents in a casual setting at a local level. Participating pharmacists will deliver informal presentations about a variety of cardiovascular related topics at community gatherings such as public events, senior activity centers, and spiritual centers as a way to bring awareness to cardiovascular risk and the corresponding pharmacy-delivered disease state management programs to help reduce their risk of heart attack or stroke.

Get Involved

For additional information on this project or to learn more about HDSPP funding opportunities, contact Rachel Sehr, Heart Disease and Stroke Prevention Coordinator at Rachel.Sehr@state.sd.us or 605-367-5356.

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