2022-2026

CARDIOVASCULAR COLLABORATIVE STRATEGIC PLAN

SOUTH DAKOTA
CARDIOVASCULAR
COLLABORATIVE

Last Updated: July 2022

July 6, 2022

Fellow South Dakotans,

Heart disease and stroke are the first and fifth leading causes of death in our nation and present a major health burden for South Dakotans. In South Dakota today, 18.5% of deaths are attributed to heart disease and 4.3% of deaths are attributed to stroke. Risk factors for heart disease and stroke remain high among South Dakotan adults. For example, 54% do not meet physical activity guidelines, 33% are obese, and 18% smoke cigarettes. Heart disease and stroke disproportionately impact certain South Dakota communities, including American Indians, people living in rural communities, and people with lower incomes. Addressing this critical public health threat is foundational to the 2022-2026 Cardiovascular Collaborative Strategic Plan.

The South Dakota Department of Health, in collaboration with healthcare organizations, have been working hard to decrease heart disease and strokes in South Dakota through initiatives such as self-measured blood pressure monitoring, healthy lifestyle programs, utilizing community health workers, and providing team-based care.

The mission of the South Dakota Cardiovascular Collaborative is to improve quality of life for all through prevention and management of cardiovascular disease and associated risk factors. The South Dakota Cardiovascular Collaborative is committed to addressing cardiovascular disease in South Dakota and has been actively working to promote health improvement strategies related to cardiovascular disease, prevent cardiovascular disease, improve acute response to cardiovascular incidents, and promote cardiovascular disease self-management. The 2022-2026 Strategic Plan details the goals, objectives, and strategies that the South Dakota Cardiovascular Collaborative will work toward to reduce the burden of cardiovascular disease for all South Dakotans.

The South Dakota Cardiovascular Collaborative will continue to utilize this plan to coordinate annual priorities and goals for education and advocacy of members and citizens of South Dakota. I am pleased and honored to endorse this plan.

Sincerely,

Joan Adam
Secretary of Health

Table of Contents

Glossary of Key Terms

- **Cardiovascular diseases**: Diseases that affect the heart or blood vessels, including the full spectrum of conditions and contributing risk factors
    - Sample conditions: coronary heart disease, heart attack, stroke, heart failure, heart rhythm problems, heart valve problems
    - Sample risk factors: smoking, high blood pressure, high cholesterol, poor diet, lack of exercise, obesity, and other chronic diseases such as diabetes
- **Evidence-based interventions**: Treatments that have been proven effective (to some degree) through outcome evaluations and are therefore likely to be effective in changing target behavior if implemented with integrity
- **Health disparities**: A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage
- **Health equity**: Attainment of the highest level of health for all people
- **Priority population**: Group disproportionately affected by cardiovascular disease, and is of particular focus for prevention and management efforts because a health disparity exists and/or there is a potential for significant impact
- **Social determinants of health**: The conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks

Introduction

About this Plan

The South Dakota Cardiovascular Collaborative Strategic Plan 2022 - 2026 is a collaborative effort of state and local partners working on heart disease and stroke prevention and management in South Dakota. The South Dakota Cardiovascular Collaborative (the Collaborative) is a broad coalition that includes representatives from diverse sectors including healthcare; state, local and tribal agencies; non-profits; and volunteers. Bringing together members from unique backgrounds allows the Collaborative to address diverse and complex issues affecting heart disease and stroke outcomes throughout the state and accomplish the goals set forth in the strategic plan.

The Cardiovascular Collaborative developed this five-year strategic plan over the course of several months. The plan serves as a guide to partners across the state to work together to reduce the burden of heart disease and stroke in South Dakota. It will be used as a "blueprint" – providing direction, focus and accountability over the next five years.

The South Dakota Cardiovascular Collaborative Strategic Plan should be considered a living document. The Collaborative and partners will work together to address strategies, review progress, gather lessons learned, identify success stories, and determine if modifications or mid-course corrections to the Plan are needed.

Health Equity Statement

Every person deserves the opportunity for a full, healthy life. The South Dakota Cardiovascular Collaborative acknowledges that there are disparities in cardiovascular health outcomes based on socioeconomic factors and social determinants of health, such as race/ethnicity, income, geographical location, and more. The Collaborative believes that a whole person approach is the best strategy for improving health outcomes across demographics that are especially impacted by heart disease and stroke. Advancing health equity and consequently reducing health disparities will benefit the health and well-being of all South Dakotans.

As champions for health equity, by 2026, the Cardiovascular Collaborative will advance cardiovascular health for all, through identifying and removing barriers to healthcare access and quality and adapting programs and resources for intended audiences.

The Burden of Heart Disease and Stroke

Heart Disease and Stroke Nationally

Heart disease and stroke present a large disease burden nationally, as heart disease is the number one cause of death in the United States, and stroke is the fifth leading cause of death.[1,2] One in four deaths in the United States are attributed to heart disease, with coronary heart disease being the most common type of heart disease. Stroke also affects a large portion of the U.S. population. Each year, 795,000 Americans have a stroke.[3]

Heart Disease and Stroke in South Dakota

Heart disease has remained a top cause of death in South Dakota and was the leading cause of death in South Dakota in 2020, accounting for 18.5% of all deaths. The age-adjusted mortality rate was higher for males than females (206.5 vs. 109.6 per 100,000 deaths) and for American Indians than whites (258.3 vs. 150.4 per 100,000 deaths).[4] The prevalence of heart disease and heart attack among adults was similar to the national average, at 4% and 4%, respectively. That amounts to 29,000 people affected by heart disease or heart attacks in South Dakota.

Males were more likely than females to have heart disease and to experience a heart attack (6% vs. 3%). In addition, from 2016-2020, the prevalence of heart disease and heart attack decreased as household income and education levels increased. While there was not a significant difference in heart disease prevalence by race, non-Hispanic American Indians had a higher prevalence of heart attack than non-Hispanic whites (7% vs. 5%).[5]

29,000

people are affected by heart disease or heart attacks in South Dakota each year

Stroke was the seventh leading cause of death in 2020 and accounted for 4.3% of all deaths in South Dakota. The age-adjusted mortality rate for stroke was 35.4 per 100,000. There were significant differences by race in stroke mortality rates in 2020, with the age-adjusted mortality rate for American Indians being 78.1 per 100,000 deaths as compared to 33.7 per 100,000 deaths for whites.[4] From 2011 to 2020, the prevalence of strokes was virtually unchanged at 3%, with the exception of 2016, when stroke prevalence in South Dakota fell to 2%. In 2020, 18,000 South Dakotan adults had ever experienced a stroke. From 2016-2020, the prevalence of previous stroke decreased as household income and education levels increased. Non-Hispanic American Indians had a slightly higher stroke prevalence (4%) as compared to non-Hispanic whites (3%).[5]

Risk Factors for Heart Disease and Stroke

Heart disease and stroke share many of the same risk factors, including high blood pressure, high cholesterol, and high blood glucose levels. Additionally, heart disease is a risk factor for stroke, as plaque buildup in arteries can block blood flow to the brain. Lifestyle factors and social determinants of health

contribute to the burden of heart disease and stroke. Poor diets, tobacco use, a lack of physical activity, excessive use of alcohol, and having overweight/obesity increase the risk of heart disease and stroke.[2]

In addition to the devastating effects of cardiovascular disease on health and quality of life, there is a substantial financial impact. Nearly all of the annual U.S. spending on healthcare is for people who have chronic disease and mental health conditions. **Heart disease and stroke alone cost the nation's healthcare system $216 billion and $147 billion in lost productivity per year.**[6,7,8]

South Dakotans have a high prevalence of heart disease and stroke risk factors. A third of South Dakota adults report having obesity, although obesity rates in the state vary by race, income, and education. American Indians have a higher rate of obesity (44%) compared to Hispanics (37%) and non-Hispanic whites (31%). In terms of income, 34% of adults with an annual income of less than $35,000 have obesity, while 31% of adults with an income of more than $75,000 report obesity. When looking at educational attainment, 35% of South Dakotans with less than a high school education report obesity compared to 29% of college graduates. South Dakotans also report higher rates of smoking than the national average, with 18% of South Dakotans reporting smoking as compared to 16% of adults nationally.[5] 54.2% of South Dakota adults did not meet physical activity guidelines in 2019.[9]

The COVID-19 pandemic has affected heart disease and stroke risk factors. The stress of the pandemic and stay-at-home orders that occurred in early 2020 has led to increased prevalence of risk factors, such as overeating, lack of physical activity, and smoking, as well as impacted mental health.[10] In addition, heart disease and stroke are two comorbidities which increase the probability of serious illness and death due to COVID-19.[11]

Emergency Medical Services

Emergency Medical Services (EMS) are a critical part of responding to cardiovascular incidents like heart attack and stroke. In South Dakota, there is a mixture of ambulance services and first-response agencies that provide service coverage across the state. Planning and development of EMS agencies is the responsibility of local governments, and there is no requirement for local communities to provide EMS. South Dakota's communities are served by 128 EMS ambulance services and six air medical services, which have a total staff of 3,453 EMS personnel.[12,13] In 2018, South Dakota's EMS responded to nearly 77,000 calls, although most of them (74%) were performed by only 10 of the ambulance services. Forty-five agencies respond to fewer than 100 calls per year and 86 agencies serve populations of 3,000 or fewer.[13] The vast footprint of South Dakota results in prolonged response and transport times. In 2016, over half of EMS agencies (57%) reported serving a community without a hospital, with 38% of these agencies reporting distances of 31 miles or greater between their main headquarters and the main hospital receiving facility.[14] About three-quarters (74%) of EMS in South Dakota use volunteer labor.[13] Of these volunteer agencies, about a third reported missing responses (32%) or delayed response (29%) due to

staffing shortages. National and state declines in EMS volunteerism raise concerns about the reliability and sustainability of EMS.[13]

Health Equity and Health Disparities

Certain communities in South Dakota are particularly impacted by heart disease and stroke due to disparities in tobacco use, availability of healthy foods and physical activity options, access to healthcare, and other social determinants of health. Social determinants of health refer to the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.[15] These conditions are grouped into five key domains: education access and quality, healthcare access and quality, neighborhood and built environment, social and community context, and economic stability. Social determinants of health help us pinpoint the specific communities and strategies needed to reduce disparity in cardiovascular health outcomes.

South Dakota is a primarily rural state which covers over 75,000 square miles. Of the state's 66 counties, 30 (45%) are designated as rural and 34 (52%) are considered frontier. This geography impacts access to healthcare services. Approximately 80% of SD is designated by the South Dakota Department of Health as a Health Professional Shortage Area due to geographic and low-income disparities.[23] Therefore, the South Dakota Cardiovascular Collaborative has identified the following priority populations: Native Americans, people living in rural areas, and people with lower incomes.

Native Americans

Since 2004, heart disease has been one of the top two causes of death for Native Americans in South Dakota.[16] Native Americans in particular may be impacted by a number of intersectional factors that can influence cardiovascular health including low socioeconomic status, diabetes, and culturally exploitative marketing tactics by tobacco industry.[17] Ceremonial, religious, and medicinal roles of sacred tobacco in some tribes' cultures require any public health interventions around tobacco, as it relates to cardiovascular health, be particularly culturally aware and responsive.[18,19]

People Living in Rural Areas

In 2020, over half of the South Dakota population lived in a rural area.[20] Over the last 30 years, nationally, there has been a widening gap in health disparities between people living in urban communities and those in rural communities.[21] In 2017, the CDC found prevalence of heart disease was 40% higher in rural communities than in metropolitan areas. In places like South Dakota, with a significant population of Native Americans living in rural communities, factors that impact cardiovascular health outcomes can be intersectional.[20,21,22]

People with Lower Incomes

Income and other linked factors, such as educational level and geographic location, all have a strong correlation with heart disease and other cardiovascular health problems.[9] Adults making less than $25,000 a year have a three times higher prevalence of cardiovascular diseases than those making $75,000. Adults without a high school diploma have twice the prevalence of those with a college-level education.[22] Access to resources and healthcare can be a large barrier for low-income communities.

Cardiovascular Disease Prevention and Management

Approaches that Work

The factors that contribute to cardiovascular disease are also relevant to many other chronic diseases – so many of the same approaches work to prevent multiple chronic disease. The National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) has developed four key domains that describe the approaches to preventing and managing chronic disease.[24]

The Cardiovascular Collaborative built on these successes and used lessons learned from challenges faced in 2017-2021 to develop the 2022-2026 Strategic Plan.[26]

Domain	Description	Example Approaches
Domain 1: Epidemiology and Surveillance	Measuring how many people have chronic diseases or risk factors to guide resource usage	• Gather information from data sources like surveys • Track policies that affect chronic disease
Domain 2: Environmental Approaches	Improving environments making it easier for people to make healthy choices	• Design communities to encourage walking • Increase access to healthy food and beverages
Domain 3: Health Care Systems Interventions	Strengthening healthcare systems to deliver services that keep people well, diagnose diseases early, reduce risk factors, and manage complications	• Improve access to healthcare • Use team-based care to improve disease management • Reduce costs of medication
Domain 4: Community Programs Linked to Clinical Services	Connecting clinical services to community programs that help people improve their quality of life, prevent or slow down the disease, avoid complications, and reduce the need for more healthcare	• Increase use of chronic disease self-management programs • Use healthcare extenders like community health workers and pharmacists to help people manage their health

The Centers for Disease Control and Prevention (CDC) Division of Heart Disease and Stroke Prevention has mapped several best practices to Domains 3 and 4, considering the evidence of impact each practice has on health, disparities, and economics, as shown in the table on the next page.[25]

Strategy	Related Domain	Evidence of Impact		
		Health Impact	Health Disparity Impact	Economic Impact
Promoting Team-Based Care to Improve High Blood Pressure Control	3	Supported	Supported	Supported
Pharmacy Collaborative Practice Agreements to Enable Collaborative Drug Therapy Management	3 & 4	Supported	Insufficient	Supported
Self-Measured Blood Pressure Monitoring With Clinical Support	3	Supported	Insufficient	Supported
Self-Management and Education	3	Supported	Insufficient	Moderate
Reducing Out-of-Pocket Costs for Medications	3	Supported	Supported	Insufficient
Implementing Clinical Decision Support Systems	3	Moderate	Moderate	Insufficient
Integrating Community Health Workers on Clinical Care Teams and in the Community	3 & 4	Supported	Supported	Supported
Community Pharmacists and Medication Therapy Management	3 & 4	Supported	Insufficient	Supported

Addressing Cardiovascular Disease in South Dakota

The 2017-2021 South Dakota Cardiovascular Collaborative Strategic Plan used the CDC's framework and best practices to address cardiovascular disease in South Dakota. These efforts are described in detail in *The South Dakota Cardiovascular Collaborative: Progress Report 2017-2022.* Some key initiatives and accomplishments include:

- Conducting a **Cardiovascular Data Survey** to assess cardiovascular data collection and quality improvement processes among 150 representatives of health facilities across the state. Survey results indicated a need to enhance knowledge about data collection and implementation, quality improvement, and team-based care.
- Developing a **South Dakota Team-Based Care Toolkit and Webinar Series** to promote team-based, patient-centered care in South Dakota.
- Creating a **South Dakota Community Health Worker (CHW) Planning and Assessment Toolkit**, a self-guided toolkit that provides background knowledge and recommendations on how to hire and effectively utilize CHWs.
- Conducting a **SD Community Leader EMS Survey**, which found that South Dakota's rural EMS network faces significant obstacles. It is now being used as a tool to communicate about EMS needs in the state.
- Promoting the **Cardiac Ready Communities (CRC) Program**, which improves the chances of survival and recovery for cardiac event victims. Kimball was designated the state's first CRC in 2021.
- Developing a **South Dakota Quality Improvement (QI) Toolkit and Webinar Series** to promote quality improvement processes as a way of improving clinical quality.
- Creating a **Media Toolkit** so partners can share multi-media tools that increase awareness around cardiovascular disease.

Strategic Planning Process

Collaborative Planning Process

The strategic plan presented in this document is a roadmap for South Dakota to improve quality of life for all through prevention and management of cardiovascular disease and associated risk factors. The plan is the result of the collaborative planning process described below.

Landscape Analysis

Key background documents, including past plans and assessments and other pertinent data were reviewed. Fourteen key informant interviews were held with opinion leaders to discuss what they would like to see accomplished short-term and long-term, assets and opportunities, and challenges and barriers. These results were synthesized to summarize key findings.

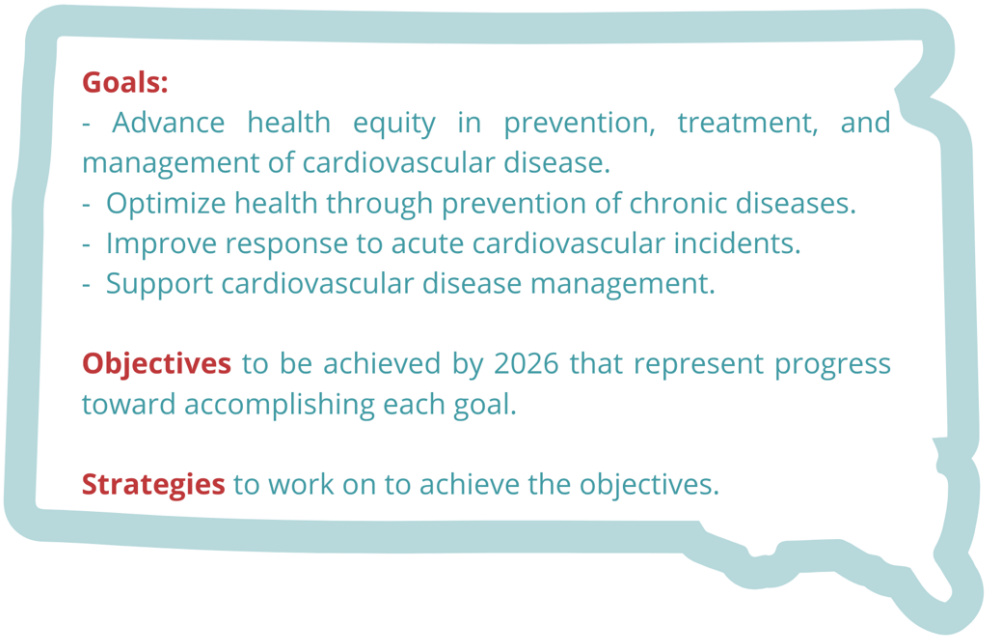
Virtual Strategic Planning Sessions

Thirty-eight individuals, including Cardiovascular Collaborative members, South Dakota Department of Health staff, and representatives of key partner organizations, attended virtual strategic planning sessions in September 2021 (see Appendix A for a list of participants). Participants were provided with an orientation that reviewed: state data and indicators; a summary of the Collaborative's progress and challenges over the past five years; and key informant interview results. The group reviewed the vision and mission statements from the *2017-2021 South Dakota Cardiovascular Collaborative Strategic Plan.* Participants then discussed, identified, and prioritized goal-specific objectives and strategies. The result of this meeting was a plan outline that provided a clear direction toward achieving the Collaborative's goals and leveraging available resources and opportunities.

Iterative Revisions

Using the plan outline developed during the strategic planning meetings, a small Core Team of Cardiovascular Collaborative members further refined the plan outline and narrative. For each strategy, the group identified key partners and actions needed to implement the strategy. The plan was iteratively reviewed by the Core Team to create the final strategic plan.

Plan Components



The Cardiovascular Collaborative Strategic Plan

Goal I: Advance health equity in prevention, treatment, and management of cardiovascular disease.

Objectives

1. Maintain or decrease the age-adjusted mortality rate from heart disease among Native Americans at 258.3 per 100,000
2. Decrease the percentage of adults with an income of less than $25,000 who have ever been diagnosed with heart attack from 6.8% to 5.6%
3. Increase the percentage of adults with an income of less than $25,000 who report having a healthcare provider from 68.2% to 75%
4. Maintain or decrease the percentage of adults living in rural areas diagnosed with a heart attack at 5.3%
5. Increase the percentage of patients who reported that their doctor always explained things in a way they could understand from 82% to 88%

Strategies

A. Collaborate with communities and priority populations to identify and address needs related to cardiovascular health
B. Promote equitable access to prevention, treatment, and management programs and resources
C. Enhance partners' organizational capacity to promote health equity across sectors

Goal II: Optimize health through prevention of chronic diseases

Objectives

1. Maintain or increase the percentage of adults classified as having a normal weight by BMI at 29.8%
2. Increase the percentage of adults who meet physical activity guidelines of 150 minutes or more per week from 45.8% to 54.5%
3. Decrease the percentage of adults who currently use commercial tobacco from 26% to 23%
4. Increase the percentage of adults who report visiting their doctor for a routine checkup within the last year from 76.2% to 78%

Strategies

A. Promote increased physical activity across the lifespan
B. Promote healthy food and beverage consumption
C. Promote commercial tobacco cessation
D. Encourage annual preventive care visits and screenings
E. Support healthcare professionals in counseling patients about risk factors and making referrals to prevention programs
F. Support implementation of K-12 holistic health education programs

Goal III: Improve response to acute cardiovascular incidents

Objectives

1. Decrease ambulance chute times from 3.9 minutes to 3.25 minutes
2. Increase the number of Cardiac Ready Communities from 1 to 5
3. Increase the number of EMTs from 3,132 to 3,850
4. Decrease the age-adjusted mortality rate due to stroke from 35.4 per 100,000 to 32.0 per 100,000
5. Decrease the age-adjusted mortality rate due to heart disease from 155.1 per 100,000 to 153 per 100,000

Strategies

A. Strengthen the active EMS workforce
B. Promote adoption of the Cardiac Ready Community program
C. Promote continuity and collaboration of care at each point of the chain of survival
D. Bolster review and utilization of cardiovascular data
E. Promote utilization of the latest cardiac and stroke guidelines

Goal IV: Support cardiovascular disease management

Objectives

1. Increase the number of participants who complete Better Choices, Better Health SD from 460 to 741
2. Increase the percentage of adults with high blood pressure who regularly check their blood pressure from 63% to 65%
3. Maintain or decrease the percentage of adults who have ever been diagnosed with a heart attack at 4.2%
4. Maintain or decrease the percentage of adults who have ever been diagnosed with stroke at 2.6%

Strategies

A. Support referral of adults with cardiovascular disease to management programs and resources
B. Promote utilization and support pharmacist-provided services, including medication therapy management
C. Support expansion of the CHW profession
D. Maximize community-clinical linkages

Appendices

Appendix A: Acknowledgements

This plan was created in collaboration with several key partners. The following individuals contributed by providing key informant interviews, participating in the Strategic Planning Workshop, and/or serving on the Core Team:

Holly Arends: Quality Consulting, LLC
Kevin Atkins: Aledade
Kristen Bundt: SDAHO
Scott Christensen: PatientCare EMS
Betty Crandall: Huron Clinic
Beth Davis: Healthology Works, LLC
Mark East: SDSMA
Stacie Fredenburg: Great Plains QIN
Brian Hambek: Spearfish Ambulance Service
Laura Harmelink: SDSU Extension, BCBH
John Harper: Amgen
Becky Heisinger: SDAHO
Tami Hogie-Lorenzen: SD UIH
Sean Hollearn: GPTLHB
Kiley Hump: SDDOH
Lindsey Karlson: CHAD
Denise Kolba: SDFMC
Leanne Kopfmann: Huron Clinic
Taylor LeBrun: Sanford Health
Marty Link: SDDOH
Kayla Magee: SDDOH
Liz Marso: SDDOH
Chrissy Meyer: AHA
Mary Michaels: SFHD
Bridget Muntefering: SDSU Extension
Josh Ohrtman: CPESN SD – The Medicine Shoppe
Sierra Phelps: SDDOH
Sharrel Pinto: SDSU
Dr. Preston Renshaw: Avera Health Plans / Dakotacare
Amanda Saeger: Sanford Health
Steve Schroeder: SDFMC
Kelci Schulz: Faulkton Area Medical Center
Rachel Sehr: SDDOH
Larissa Skjonsberg: SDDOH
Mandi Stegenga: SD Health Link
Lynn Thomas: Sanford Health
Dr. Tomasz Stys: Sanford Health
Ben Tiensvold: CHWSD
Shannon Udy: GPTLHB
Colette Weatherstone: CPHCS
Jennifer Williams
Lisa Zolnowsky: Monument Health

Partners Acronym List

- **AHA**: American Heart Association
- **BCBH**: Better Choices, Better Health
- **CHAD**: Community Healthcare Association of the Dakotas
- **CHWSD**: Community Health Worker Collaborative of South Dakota
- **CPHCS**: Coteau des Prairies Health Care System
- **GPTLHB**: Great Plains Tribal Leaders Health Board
- **Huron Clinic**: Huron Clinic Foundation
- **SD CPESN**: South Dakota Community Pharmacy Enhanced Services Network
- **SDAHO**: SD Association of Healthcare Organizations
- **SDDOH**: SD Department of Health
- **SDFMC**: SD Foundation for Medical Care
- **SDSMA**: SD State Medical Association
- **SFHD:** Sioux Falls Health Department
- **SDSU**: South Dakota State University
- **SD UIH**: SD Urban Indian Health

- **Great Plains QIN:** Great Plains Quality Innovation Network

Appendix B: Plan Alignment

Alignment with South Dakota Department of Health Strategic Plan

The Cardiovascular Collaborative membership includes individuals working across multiple chronic disease prevention and control programs, including those located within the Department of Health. Efforts of this Plan will contribute to the overarching Department of Health Plan, as well as relevant Program plans.

DOH Plan Goals	Relevant Cardiovascular Collaborative Plan Strategies
Goal 1: Enhance the accessibility, quality, and effective use of health resources.	• **Strategy I.B** Promote equitable access to prevention, treatment, and management programs and resources • **Strategy II.E.** Support healthcare professionals in counseling patients about risk factors and making referrals to prevention programs • **Strategy IV.A.** Support referral of adults with cardiovascular disease to management programs and resources
Goal 2: Provide services to improve public health	• **Strategy II.A**. Promote increased physical activity across the lifespan • **Strategy II.B.** Promote healthy food and beverage consumption • **Strategy II.C.** Promote commercial tobacco cessation • **Strategy III.A**. Strengthen the active EMS workforce
Goal 4: Maximize partnerships to address underlying factors that determine overall health	• **Strategy I.A.** Collaborate with communities and priority populations to identify and address needs related to cardiovascular health • **Strategy I.C.** Enhance partners' organizational capacity to promote health equity across sectors • **Strategy III.B**. Promote adoption of the Cardiac Ready Community program • **Strategy IV.B.** Promote utilization and support pharmacist provided services, including medication therapy management • **Strategy IV.C**. Support expansion of the CHW profession • **Strategy IV.D.** Maximize community-clinical linkages

Alignment with DOH Program Plans

Program Plan Components	Relevant Cardiovascular Collaborative Plan Strategies					
	II.A	II.B	II.C	II.E	IV.A	IV.C
Cancer Control						
• Priority 1: Reduce tobacco use • Priority 3: Increase healthy, active lifestyles	X	X	X			
Diabetes Prevention and Control						
• Goal A Prevention: Prevent the onset of diabetes through evidence-based public health strategies	X	X				
Nutrition and Physical Activity						
• Goal I: Promote, support, and implement the adoption of food service guidelines/nutrition standards in priority settings Early Care and Education (ECE), Local Education Agencies (LEA), worksites, communities • Goal II: Promote the adoption of physical education/physical activity policies in local education agencies • Goal III: Promote and implement the adoption of physical activity in worksites • Goal IV: Increase access to healthy foods and beverages. • Goal V: Increase adoption of healthy community design principles and access to places and spaces to be physically active in communities • Goal VI: Implement high quality physical education and physical activity in K-12 schools • Goal VII: Improve physical activity and screen time policies and practices in ECEs • Goal VIII: Improve nutrition quality of foods and beverages served or available in local education agencies • Goal XI: Promote adoption of healthcare provider behaviors that lead to quality care improvement changes within health systems • Goal X: Increase use of community health workers supporting self-management of chronic diseases	X	X		X	X	X
Tobacco Control						
• Goal II: Promote quitting of all tobacco products			X			

Alignment with CDC Chronic Disease Domains

The CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) has developed four domains that provide a framework for promoting chronic disease prevention efforts. The following table shows how strategies from this Plan link to the NCCDPHP domains.[26]

Domain: Epidemiology and Surveillance
• **Cross-cutting**. All plan strategies and objectives are informed by data. • **Strategy III.D**. Bolster review and utilization of cardiovascular data
Domain: Environmental Approaches
• **Strategy II.A.** Promote increased physical activity across the lifespan • **Strategy II.B.** Promote healthy food and beverage consumption • **Strategy II.C.** Promote commercial tobacco cessation • **Strategy III.B.** Promote adoption of the Cardiac Ready Community program
Domain: Health Care System Interventions
• **Strategy II.E**. Support healthcare professionals in counseling patients about risk factors and making referrals to prevention programs • **Strategy III.A.** Strengthen the active EMS workforce • **Strategy III.C.** Promote continuity and collaboration of care at each point of the chain of survival • **Strategy III.E.** Promote utilization of the latest cardiac and stroke guidelines
Domain: Community Programs Linked to Clinical Services
• **Strategy I.A.** Collaborate with communities and priority populations to identify and address needs related to cardiovascular health • **Strategy I.B.** Promote equitable access to prevention, treatment, and management programs and resources • **Strategy I.C.** Enhance partners' organizational capacity to promote health equity across sectors • **Strategy II.D.** Encourage annual preventive care visits and screenings • **Strategy II.F.** Support implementation of K-12 holistic health education programs • **Strategy IV.A.** Support referral of adults with cardiovascular disease to management programs and resources • **Strategy IV.B.** Promote utilization and support pharmacist provided services, including medication therapy management • **Strategy IV.C.** Support expansion of the CHW profession • **Strategy IV.D.** Maximize community-clinical linkages

Appendix C: References

1. Ahmad, FB, & Anderson, RN. (2021). The Leading Causes of Death in the US for 2020. JAMA, 325(18), 1829. **https://doi.org/10.1001/jama.2021.5469**
2. Centers for Disease Control and Prevention. (2022, February 7). Heart Disease Facts. https://www.cdc.gov/heartdisease/facts.htm
3. Virani SS, Alonso A, Aparicio HJ, Benjamin EJ, Bittencourt MS, Callaway CW, Carson AP, Chamberlain AM, Cheng S, Delling FN, Elkind MSV, Evenson KR, Ferguson JF, Gupta DK, Khan SS, Kissela BM, Knutson KL, Lee CD, Lewis TT, Liu J, Loop MS, Lutsey PL, Ma J, Mackey J, Martin SS, Matchar DB, Mussolino ME, Navaneethan SD, Perak AM, Roth GA, Samad Z, Satou GM, Schroeder EB, Shah SH, Shay CM, Stokes A, VanWagner LB, Wang N-Y & Tsao CW. (January 27, 2021). Heart disease and stroke statistics—2021 update: a report from the American Heart Association. *Circulation*, 143:e254–e743. https://www.ahajournals.org/doi/10.1161/CIR.0000000000000950
4. South Dakota Department of Health. (2020). Vital Statistics: Mortality. https://doh.sd.gov/statistics/2020Vital/08_Mortality.pdf
5. Centers for Disease Control and Prevention. *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2020.
6. Buttorff C, Ruder T, & Bauman M. (2017). Multiple Chronic Conditions in the United States. Rand Corporation. https://www.rand.org/content/dam/rand/pubs/tools/TL200/TL221/RAND_TL221.pdf
7. Centers for Medicare & Medicaid Services. (December 15, 2021). *National Health Expenditure Data: Historical*. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical
8. Benjamin EJ, Virani SS, Callaway CW, et al. (2018). Heart disease and stroke statistics—2018 update: a report from the American Heart Association. *Circulation*. 2018;137:e67–e492. https://www.ahajournals.org/doi/10.1161/cir.0000000000000558
9. Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2019.
10. Knell, G, Robertson, MC, Dooley, EE, Burford, K, & Mendez, KS. (2020). Health Behavior Changes During COVID-19 Pandemic and Subsequent "Stay-at-Home" Orders. *International Journal of Environmental Research and Public Health*. 17(17), 6268. https://doi.org/10.3390/ijerph17176268
11. Centers for Disease Control and Prevention. (2022, May 2). *People with Certain Medical Conditions*. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html
12. South Dakota EMS Program and Board of Medical and Osteopathic Examiners. (2022).
13. SafeTech Solutions. (2019, August). *What Every Rural South Dakota Community Needs to Know About EMS: A Guide to Challenges and Opportunities*. https://doh.sd.gov/documents/diseases/chronic/2019Report_RuralEMS_SD.pdf

14. SafeTech Solutions. (2016, December). *South Dakota Emergency Medical Services Survey and Listening Sessions Report*. https://doh.sd.gov/documents/ems/2016finalsd-ems-survey-report.pdf

15. Centers for Disease Control and Prevention. (2015). *Best Practices User Guide: Health Equity in Tobacco Prevention and Control*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

16. South Dakota Department of Health. *10 leading causes of death among American Indians by year, South Dakota 2004-2018.* https://doh.sd.gov/documents/statistics/SD_MortalityTable_AmericanIndian_2009-2018.pdf

17. Breathett, K, Sims, M, Gross, M, Jackson, EA, Jones, EJ, Navas-Acien, A, Taylor, H, Thomas, KL, & Howard, BV. (2020). Cardiovascular health in American Indians and Alaska Natives: A scientific statement from the American Heart Association. *Circulation*, 141(25). https://doi.org/10.1161/cir.0000000000000773

18. Satter DE, Roby DH, Smith LM, Avendano KK, Kaslow J, Wallace SP. (2012). Costs of smoking and policy strategies for California American Indian communities. *J Cancer Educ*, 27(1 Suppl):S91-105. https://doi.org/10.1007/s13187-012-0340-5

19. U.S. Department of Health and Human Services. (1998). *Tobacco Use Among U.S. Racial/Ethnic Minority Groups—African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, Hispanics: A Report of the Surgeon General*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. https://www.cdc.gov/tobacco/data_statistics/sgr/1998/index.htm

20. Rural Health Information Hub. (2022, June 24). *South Dakota.* https://www.ruralhealthinfo.org/states/south-dakota

21. Harrington RA, Califf RM, Balamurugan A, Brown N, Benjamin RM, Braund WE, Hipp J, Konig M, Sanchez E, Joynt Maddox KE. (2020). Call to action: rural health: a presidential advisory from the American Heart Association and American Stroke Association. *Circulation*, 141:e615–e644. https://doi.org/10.1161/CIR.0000000000000753

22. America's Health Rankings. (2022, January 15). Health Disparities. https://www.americashealthrankings.org/explore/disparity/measure/cvd/state/SD

23. South Dakota Department of Health Office on Rural Health. (2022). South Dakota health professional shortage areas: Primary medical care. https://doh.sd.gov/documents/Providers/RuralHealth/HPSA-%20Primary%20Healthcare%203.22%20final.pdf

24. Center for Disease Control and Prevention. (2021, April 28). How we prevent chronic diseases and promote health. https://www.cdc.gov/chronicdisease/center/nccdphp/how.htm

25. Centers for Disease Control and Prevention. (2017). *Best Practices for Cardiovascular Disease Prevention Programs: A Guide to Effective Health Care System Interventions and Community Programs Linked to Clinical Services*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services.

26. South Dakota Department of Health. (2022). *The South Dakota Cardiovascular Collaborative: Progress Report 2017-2021*. https://doh.sd.gov/documents/diseases/chronic/CC_ProgressReport_2017-2021.pdf

Photography References

Cover: Unsplash.com

Page 3: iStock Photos

Page 6: South Dakota Cardiovascular Collaborative – Courtesy of Rachel Sehr, BSN, RN

Page 8: South Dakota Cardiovascular Collaborative – Courtesy of Rachel Sehr, BSN, RN

Appendix D: Program Funding Statement

This project was completed in collaboration with the South Dakota Department of Health, supported by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services under cooperative agreement # 1 NU58DP006526-01-11. The contents are those of the author(s) and do not necessarily represent the views of CDC or the U.S. Government.