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Heart disease is the leading cause of death in the United States.¹

High blood pressure, high cholesterol, and smoking are all key risk factors that could lead to cardiovascular disease (CVD) and stroke.²

According to the Centers for Disease Control and Prevention, about half of Americans (47%) exhibit at least one of these risk factors.³

Combined, heart disease and stroke were the leading cause of death in Colorado in 2013, accounting for 24% (8,030) of all deaths.

Approximately 1 person dies from CVD every hour in Colorado.⁴

Among adult Coloradans in 2013, 6% were aware of having CVD and

26% were aware of having high blood pressure (hypertension).⁸In

addition, adult Coloradans reported the following risk factors for heart disease: obesity (21%), being physically inactive for the past 30 days

(18%), high cholesterol (35%), high blood pressure (26%), current smoking (18%), diabetes (6.5%), eating fruit less than daily (36%),

and eating vegetables less than daily (19%).⁴In Colorado, during

2003–2013, the prevalence for high blood pressure significantly

increased, from 21% to 26%, and there were no significant changes in the prevalence for CVD and high

cholesterol.⁴Heart disease alone accounted for \$4.4 billion in annual costs associated with CVD in Colorado in 2010, with \$549 million of the direct costs attributed to Medicaid.⁴



The overarching goal of CHHS is to improve cardiovascular health across Colorado by promoting access to primary care and encouraging healthy behaviors.

To address growing rates of risk factors related to CVD, Colorado Prevention Center (CPC) Community Health implemented the Colorado Heart Healthy Solutions Program (CHHS) in 2008, a statewide community-based program that aims to prevent, detect, and control CVD, including heart disease and diabetes, by reducing the prevalence of associated risk factors.⁵ CHHS is primarily funded by the Cancer, Cardiovascular and Chronic Pulmonary Disease Grants Program at the Colorado Department of Public Health and Environment, which is supported by the state tobacco tax revenue. The overarching goal of CHHS is to improve cardiovascular health across Colorado by promoting access to primary care and encouraging healthy behaviors. The secondary goal is to build the capacity of communities to change norms related to health and to enable community members to take responsibility for adopting healthy lifestyle choices. CHHS primarily serves hard-to-reach rural residents, minorities, the poor, those with less education, and the medically underserved throughout Colorado.⁶ The program is free to participants, and settings include pharmacies, grocery stores, health fairs, work sites, and clinic-based offices.⁶

To help meet these goals, CHHS collaborates with community agencies and clinics to form a resource network to help clients improve their health. This network is made up of community health workers (CHWs), public health professionals, medical providers, and primary care clinics.¹⁰As part of CHHS, CHWs provide health education, screenings (cholesterol, glucose, weight, and blood pressure measurements), referrals, and ongoing support using motivational interviewing skills to activate behavior change to reduce risks for heart disease among residents in Colorado.¹⁰In addition, CHWs conduct follow-up interactions and retests with

participants (within 2 weeks of the initial screening/assessment) and reassess at-risk participants 6 months later and each subsequent year to determine whether there have been any changes in key CVD risk factors.⁶

In 2009, CHHS developed and implemented the Outreach, Screening, and Referral data system (OSCAR) in an effort to improve health outcomes by uniformly monitoring individual and community-level health data, and standardizing health messages delivered by CHWs. The OSCAR system consists of a computer-based interface for CHWs to use in the field, and a web service and application for program administration and report production efforts. Some key features of OSCAR include: a scheduling system that prompts the CHW to contact program participants; managing and tracking risk factors associated with heart disease and stroke, specifically hypertension; measuring health outcomes at both the individual and community level; generating evidence-based health recommendations that provide consistent messaging based upon national guidelines; generating referral letters to local health care providers; and managing an inventory of local medical clinics and healthy living resources.⁷ Additionally, OSCAR produces a comprehensive health assessment that calculates the 10-year CVD risk of the participant having a heart attack or stroke, and provides individualized health recommendations for the participant based on national recommendations.⁸

Between 2008 and 2014, CHHS served 40,000 individuals, 64% of whom lived in rural or frontier counties where access to resources is limited, and 66% of whom were at-risk for CVD, stroke, and/or diabetes.⁸ As a result of the program, at-risk participants have seen improvements in CVD risk factors, including decreases in systolic and diastolic blood pressure, cholesterol, and glucose levels. In addition, 21% of at-risk participants decreased their weekly fat intake, 22% increased their physical activity levels, and 17% of smokers quit smoking. On average, these outcomes were measured 27 months after initial contact with the program.⁸ Additionally, an evaluation of CHHS program participants from 2010 to 2011 found that participants who received a follow-up phone call from a CHW before the retest had lower 10-year risk scores at retest than those who did not receive a follow-up call.⁹ As of March 2015, CHHS was being implemented in 27 out of 64 counties in the state.⁶

Throughout the years, CHHS has observed positive changes in the biometric health markers and health behaviors of program participants. Much of the program's success can be attributed to the focus on partnering with local agencies to implement CHHS-related efforts in their communities. Additionally, the use of the OSCAR system has been integral to the program's success. Not only has OSCAR allowed CPC Community Health to collect important data to show the effectiveness of the intervention, but it has served as a decision support tool for CHWs in the field and allowed for the monitoring of risk factor changes among program participants. In the future, CPC Community Health aims to bring CHHS to other communities around the United States by identifying agencies or community-based programs that may benefit from CHHS and/or use of the OSCAR system. CHHS will continue to offer a solution to support the health plan created by client and provider, outside of the walls of a medical clinic.

¹<https://www.healthypeople.gov/2020/topics-objectives/topic/heart-disease...>

²<http://www.cdc.gov/nchs/data/databriefs/db103.pdf>

³<http://www.cdc.gov/heartdisease/facts.htm>

⁴ Facts for Action: Chronic Diseases and Related Risk Factors in Colorado

⁵ <http://www.hearthealthysolutions.org/>

⁶ Colorado Heart Healthy Solutions Field Notes

⁷ <http://www.cpccommunityhealth.org/oscar/>

⁸ Colorado Heart Healthy Solutions Infographic. Provided by program.

⁹ http://www.caringforcolorado.org/sites/default/files/ajph_2012_chhs_kran...

Organization Name: CPC Community Health
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Suite 200
Aurora, CO 80045
United States
[Visit Website](#)

Organization Mission: The mission of the CPC Community Health is to improve the health of all Coloradans by creating innovative community health programs that deliver evidence-based interventions.

Organization Type: Nonprofit/Community-Based Organization

Program Name: Colorado Heart Healthy Solutions Program
13199 East Montview Blvd.
Suite 200
Aurora, CO 80045
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Healthy People 2020 Topic Area(s) addressed: [Heart Disease and Stroke](#)

Healthy People 2020 Objective(s) addressed: [HDS-2](#), [HDS-5](#), [HDS-7](#), [HDS-12](#) 

Healthy People 2020 overarching goal addressed: Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.

Year: 2016

Supplemental Material: [The Impact of Community Health Workers on Cardiovascular Risk Reduction; Effectiveness of a Community Health Worker Cardiovascular Risk Reduction Program in Public Health and Health Care Settings](#)

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Site last updated 02/06/22