

Introduction

Cardiovascular disease (CVD) is characterized by a variety of conditions including atherosclerosis, coronary artery disease, heart attack, angina, arrhythmias or sudden cardiac death. Heart disease is the number one leading cause of mortality nationally for both men and women followed by stroke which is the number three killer in the nation.¹ Nationally, 1 in 4 Americans (600,000) die every year in the United States (U.S.) from heart disease.¹ Coronary heart disease is the most common heart disease which kills over 380,000 Americans annually.² Heart attacks affect approximately 720,000 Americans annually.³ Men disproportionately die from heart related diseases.¹ Mortality also disproportionately

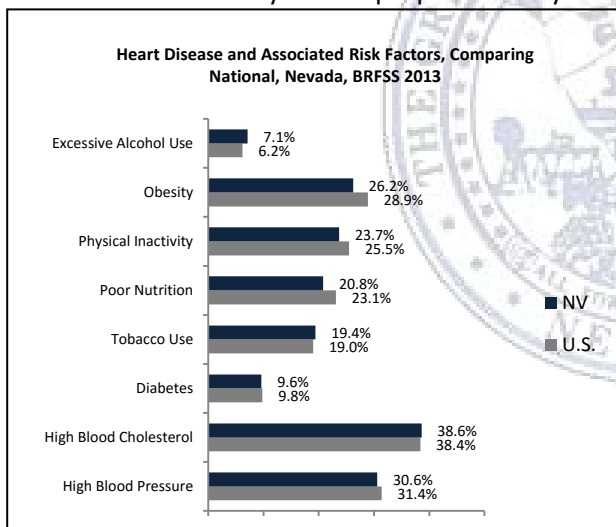
and stroke are among the most ubiquitous and costly health problems facing the nation today, accounting for more than \$312.6 billion in health care expenditures and lost productivity annually.⁴

Over 13,000 Nevadans were hospitalized for coronary heart disease and stroke (primary diagnosis) in 2012.⁵ Heart disease and stroke account for nearly 1 out of 3 deaths in Nevada. Heart disease has been the leading cause of death in Nevada accounting for 4,999 (24.8%) of deaths followed by stroke at fifth place, accounting for 867 (4.3%) of deaths.⁴ The most common risk factors associated with heart disease and stroke include high blood cholesterol, high blood pressure, diabetes mellitus as well as behavioral risk factors such as tobacco use, diet, physical inactivity, obesity and excessive alcohol use.

Given the burden of CVD, the Heart Disease and Stroke Prevention and Control Program (HDSPC) was established in 2013. The program is 100% federally funded by the Centers for Disease Control and Prevention (CDC) through two different funding streams. The program receives an average of \$347,950 per year to support infrastructure and health systems based strategies for cardiovascular health. This program focuses on modifiable risk factors targeting conditions such as high blood cholesterol, high blood pressure and diabetes mellitus as well as behavioral risk factors such as tobacco use, diet, physical inactivity, obesity and excessive alcohol use.⁶

The HDSPC program is aligning activities around the national Million Hearts initiative to prevent

affect ethnic minorities, which is led by African Americans at 24.5%. Together, heart disease



¹ Centers for Disease Control and Prevention. (2013). Heart disease and stroke prevention: Addressing the nation's leading killers at a glance. Retrieved from: <http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2011/heart-disease-and-stroke-aag-2011.pdf>

² Murphy S.L., Xu, J.Q., & Kochanek, K.D. (2013). Final data for 2010. National Vital Statistics Report, 61(4). Retrieved from: http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf

³ Go AS, Mozaffarian, D., Rober, V.L., Benjamin E.J., Berry J.D., Blaha, M.J. et al. (2014). Heart disease and stroke statistics – 2014 update: a report from the American Heart Association. *Circulation*, 128.

⁴ Million Hearts. (2014). About heart disease & stroke. Retrieved from: <http://millionhearts.hhs.gov/abouthds/cost-consequences.html>

⁵ Office of Public Health Informatics and Epidemiology. (2014). Heart disease and stroke in Nevada. Division of Public and Behavioral Health. Carson City, Nevada.

⁶ Centers for Disease Control and Prevention. (2014). Heart disease risk factors. Retrieved from: http://www.cdc.gov/heartdisease/risk_factors.htm

one million heart attacks and strokes in five years.⁷ This will be done through engaging providers, patients, communities and other stakeholders to implement evidence-based policies and strategies that are known to have a positive impact across the spectrum of prevention and care by implementing the “ABCS” of clinical prevention (**A**spirin when appropriate, **B**lood pressure control, **C**holesterol management, and **S**moking cessation), and by encouraging healthier lifestyles and creating supportive communities.

This program is focusing on four priority initiatives: 1) Working with the state health information exchange to encourage reporting of the ABCS, 2) Using electronic health record data to implement quality improvement processes in health systems, 3) Increasing referrals into life-style change or self-management programs, and 4) Increasing Community Health Workers into team-based care within the clinical setting.

The Nevada Division of Public and Behavioral Health (NDPBH) recommend the following:

- Encouraging providers to report the National Quality Forum’s (NQF) clinical quality measures:
 - NQF #0018 Controlling High Blood Pressure
 - NQF #0028 Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention
 - NQF #0059 Diabetes: Hemoglobin A1c Poor Control
- Nevada health plans and providers can develop referral protocols into evidence-based prevention life-style change or self-management programs such as the Diabetes Prevention Program (DPP) or Chronic Disease/Diabetes self-management programs (CDSMP/DSMP).

- Support reimbursement models that incorporate community health workers into team-based care.

Affordable Care Act (ACA)

The ACA helps move the nation from a focus on sickness and disease to one based on wellness and prevention. The ACA has made prevention affordable and accessible for most Americans by requiring most health plans to cover and eliminate cost sharing for preventive services. After September 23, 2010, the following preventive services must be covered without the consumer having to pay a copayment or co-insurance or meet their deductible.⁸

Covered Preventive Services for Adults:

- Alcohol misuse – screening and counseling
- Aspirin use for men and women of certain ages
- Blood pressure screening for all adults
- Cholesterol screening for adults of certain ages or at high risk
- Type 2 Diabetes screening for adults with high blood pressure
- Diet counseling for adults at higher risk for chronic disease
- Obesity screening and counseling for all adults
- Tobacco use screening for all adults and cessation interventions for tobacco users
- Gestational diabetes screening for women 24 to 28 weeks pregnant and those at high risk of developing gestational diabetes

Problem Statement

The annual costs associated with cardiovascular disease and stroke in Nevada is estimated to be

⁷ Million Hearts. (2014). The initiative. Retrieved from: <http://millionhearts.hhs.gov/aboutmh/achieving-goals.html>

⁸ U.S. Department of Health and Human Services. (2014). Preventive services covered under the affordable care act. Retrieved from: <https://www.hhs.gov/HealthCare>



\$7.20 billion and \$1.75 billion dollars respectively.⁹ This includes direct costs such as charges incurred by an inpatient for the duration of their stay in a hospital and for indirect costs associated.⁹ Indirect costs include productivity losses due to illness and premature death. Diseases of the heart and malignant neoplasms account for over 64,000 total years lost in Nevada annually. By 2023, the total economic burden of chronic disease overall is estimated to cost the state an overwhelming \$45.5 billion annually.⁹ Insurmountable costs will continue to accrue unless evidence-based prevention and management efforts are implemented to counteract an increasingly unhealthy state.

Strategies

Through Affordable Care Act, the Community Preventive Services Task Force was developed and recommended three strategies for cardiovascular disease prevention and control:

Clinical Decision-Support Systems (CDSS) – are computer-based information systems designed to assist healthcare providers in implementing clinical guidelines at the point of care. CDSS use patient data to provide tailored patient assessments and evidence-based treatment recommendations for healthcare providers to consider. Patient information is entered manually or automatically through an electronic health record (EHR) system. CDSS for cardiovascular disease prevention (CVD) include one or more of the following: 1) Reminders for overdue CVD preventive services including screening for risk factors such as high blood

pressure, diabetes, and high cholesterol, 2) Assessments of patients' risk for developing CVD based on their medical history, symptoms and clinical test results, 3) Recommendations for evidence-based treatments to prevent CVD, including intensification of treatment, 4) Recommendations for health behavior changes to discuss with patients such as quitting smoking, increasing physical activity, and reducing excessive salt intake, and 5) Alerts when indicators for CVD risk factors are not at goal.¹⁰

Reducing out-of-pocket costs for cardiovascular disease preventive services for patients with high blood pressure and high cholesterol

– involves program and policy changes that make CVD preventive services more affordable. These services include: 1) Medication and lowering cost associated, 2) Behavioral counseling (e.g. nutrition counseling), and 3) Behavioral support (e.g. community-based weight management programs, gym membership). It is recommended that programmatic decisions and policies are changed to lower medications at no cost or reduced cost, initiatives are implemented by health plans, employers and insurance companies and that a team-based care and medication counseling are also implemented in the process. It also suggests supporting diabetes management programs and evidence-based tobacco cessation treatments.¹¹

Impact: Studies have shown a cost savings of \$87 per person per year for a value-based insurance design or \$321 per person per year for a value-based insurance design combined with team-based care. Studies indicated that

⁹ Whitehill, J., Flores, M, & Mburia-Mwalili, A. (2013). The Burden of chronic Disease in Nevada. Chronic Disease Prevention and Health Promotion, Carson City: Nevada State Health Division.

¹⁰ Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, et al. Effect of clinical decision-support systems: a systematic review. *Ann Intern Med* 2012;157(1):29-43.

¹¹ Mason JM, Freemantle N, Gibson JM, New JP. Specialist nurse-led clinics to improve control of hypertension and hyperlipidemia in diabetes: economic analysis of the SPLINT trial. *Diabetes Care* 2005;28(1):40-6.

interventions were cost effective upwards of \$50,000.¹²

Team-based care to improve blood pressure control – is an organizational intervention that incorporates a multidisciplinary team to improve the quality of hypertension care for patients. Each team includes the patient, the patient’s primary care provider, and other professionals (e.g nurses, pharmacists, dietitians, social workers, and community health workers). Team members provide process support and share responsibilities of hypertension care to complement the activities of the primary care provider. These responsibilities include medication management; patient follow-up; and adherence and self-management support. Team based care interventions typically include activities to: 1) Facilitate communication and coordination of care support among various team members, 2) Enhance use of evidence-based guidelines by team members, 3) Establish regular, structured follow-up mechanisms to monitor patients’ progress and schedule additional visits as needed, and 4) Actively engage patients in their own care by providing them with education about hypertension medication, adherence support, and tools and resources for self-management.¹³

Impact: Cost effectiveness of intervention, expressed in cost per quality adjusted life year (QALY) saved, was estimated to be between \$4763 - \$13,992. 27 out of 29 cost-effectiveness estimates from 11 studies were below the conservative threshold of \$50,000 per QALY

saved, which indicates that team-based care for blood pressure control is cost-effective.¹⁴

Recommendations

There are three recommended strategies that Nevadans can push to implement now:

- Encouraging providers to report the National Quality Forum’s (NQF) clinical quality measures: 1) NQF #0018 Controlling High Blood Pressure, 2) NQF #0028 Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention, 3) NQF #0059 Diabetes: Hemoglobin A1c Poor Control.
- Nevada health plans and providers can develop referral protocols into evidence-based prevention life-style change or self-management programs such as the Diabetes Prevention Program (DPP) or Chronic Disease/Diabetes self-management programs (CDSMP/DSMP).
- Support reimbursement models that incorporate community health workers into team-based care.

Heart & Stroke Prevention & Control Program

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¹² McEwan P, Peters JR, Bergenheim K, Currie CJ. Evaluation of the costs and outcomes from changes in risk factors in type 2 diabetes using the Cardiff stochastic simulation cost-utility model (DiabForecaster). *Curr Med Res Opin* 2005;22(1):121-9.

¹³ Mason JM, Freemantle N, Gibson JM, New JP. Specialist nurse-led clinics to improve control of hypertension and hyperlipidemia in diabetes: economic analysis of the SPLINT trial. *Diabetes Care* 2005;28(1):40-6.

¹⁴ McEwan P, Peters JR, Bergenheim K, Currie CJ. Evaluation of the costs and outcomes from changes in risk factors in type 2 diabetes using the Cardiff stochastic simulation cost-utility model (DiabForecaster). *Curr Med Res Opin* 2006;22(1):121-9.