

Public Health Chronic Disease Prevention & Health Promotion in Nevada in the Era of the Affordable Care Act

Building Capacity to Meet the Health Needs of Nevadans

Mónica Morales, MPA

February 2015

Chronic disease is one of the major public health challenges of the twenty-first century. Nevada must make measurable contributions to public health chronic disease prevention and promotion – and by doing so, it will build the capacity in the state to improve quality of life, advance health outcomes, increase access to care and help control health care spending.

Contributors

Nicki Aaker

Director

Carson City Health and Human Services

Linda Gabor, MSN, RN

Public Health Nursing Supervisor

Community and Clinical Health Services

Washoe County Health District

Mónica Morales, MPA

Section Manager

Chronic Disease Prevention & Health Promotion

Nevada State Division of Public & Behavioral Health

Deborah M. Williams, MPA, MPH, CHES

Manager

Office of Chronic Disease Prevention and Health Promotion

Southern Nevada Health District

Executive Summary

Chronic disease continues to be one of the major public health challenges of the twenty-first century. Heart disease, stroke, cancer, diabetes and chronic obstructive pulmonary disease are among the most common, costly, and preventable diseases in Nevada. In 2013, over half a million Nevadans had at least one of the chronic diseases listed above and one-in-five Nevadan's had more than one of these chronic conditions.¹ These five chronic diseases accounted for sixty-one percent (61%) of the deaths in Nevada in 2013. During the same time period, sixty-two percent (65%) of adults in Nevada were either obese (531,266) or overweight (783,069) and nineteen percent were current smokers. This translated into an annual estimated cost of \$20.3 billion dollars in 2011 for indirect and direct costs in Nevada.²

Despite a growing body of evidence for the effectiveness of chronic disease prevention and health promotion, only about four cents of every health dollar is spent on prevention and public health.³ In 2014, Nevada ranked 49th in state public health spending per capita, 31st in federal funding from the Centers for Disease Control and Prevention (CDC), and 49th in federal funding from the Health Resources and Services Administration (HRSA).⁴ This translates into the state only having four chronic disease prevention and health promotion departments in place, with approximately \$9.1 million dollars combined, to invest in chronic disease promotion and prevention initiatives.

The incidence and impacts of preventable diseases can be significantly reduced with an approach that incorporates public health prevention and health promotion, public and private partnerships, and system centered, population-wide interventions. In order for this to be a reality in Nevada, it is essential for the public health chronic disease sector to have a strong foundation. In order to build the capacity of chronic disease prevention and health promotion in Nevada, the four Chronic Disease Departments in the state have identified six key domains to focus on over the next five years. These are:

1. Evaluation and Epidemiology
2. Health Education and Promotion
3. Community and Clinical Linkages
4. Health System Interventions
5. Policy and Environmental Changes
6. Leadership and Management Capacity

Transforming the state's health and providing Nevadans with equitable opportunities to take charge of their health requires work within the six key domains. These domains coincide with national standards and priorities set by Healthy People 2020, the Centers for Disease Control and Prevention, and the U.S. Preventive Services Task Force. As such, the four Chronic Disease Prevention and Health Promotion Departments will incorporate these six priorities, based on funding and capacity into program activities. By investing in these six domains, focusing on the most prevalent chronic diseases (heart disease, stroke and diabetes), and addressing behaviors that contribute to these conditions (tobacco use, poor diet, and physical inactivity), we can make a profound impact in reducing the harm caused by chronic disease. However, this cannot happen unless we make a considerable effort to invest in chronic disease prevention and health promotion capacity in the state.

Research has proven that for every dollar invested in effective prevention and public health initiatives, \$5.60 is saved. The same study reveals that, if we invest \$10 per person every year in effective community-based public health programs, we could save the United States more than \$16 billion in just five years.⁵ If Nevada were to invest similarly, \$10 per person in prevention and promotion activities, this would translate into approximately \$28 million dollars based on Nevada's population. Investing in Chronic Disease Prevention and Health Promotion activities including infrastructure, workforce, and evidence-based practices will strengthen Nevada's capacity to meet 21st century challenges to improve quality of life, increase life expectancy, increase productivity and help to control health care spending.

This document describes the current inadequate financial, programmatic, and workforce capacity in Nevada as it pertains to public health chronic disease prevention and health promotion, and the dire need to invest in building capacity. Public health chronic disease prevention and health promotion, if well-orchestrated, has been associated with improvements in health care access, client health status, health- and screening-related behaviors; environmental strategies that impact health and reduced health care costs.³

Introduction

The United States' healthcare system has long been plagued by a disturbing paradox: while healthcare spending reached \$2.7 trillion, or \$8,600 per capita, in 2011 – by far the highest of all nations – the U.S. continues to fare worse than other wealthy countries in health domains such as life expectancy, birth outcomes, sexually transmitted infections, and chronic diseases.⁶ The majority of health care costs in the U.S. associated with medical conditions are linked with chronic diseases and associated health risk behaviors.⁷ Key issues affecting the quality of care in the U.S. include nationwide primary care provider shortages, multiple barriers to health access, and the lack of infrastructure and capacity pertaining to the prevention and management of chronic diseases.

Despite a growing body of evidence for the effectiveness of chronic disease prevention and health promotion, only about four cents of every health dollar is spent on prevention and public health.³ Nevada currently ranks 49th in state public health spending per capita, 31st in federal funding from the Centers for Disease Control and Prevention (CDC), and 49th in federal funding from the Health Resources and Services Administration (HRSA).⁴ Furthermore, Nevada is plagued with high rates of chronic diseases such as diabetes, cancer, and diseases of the heart. To make matters worse, Nevada lacks the programmatic infrastructure and staff capacity to address the burden of chronic disease in the state. In order for Nevada to improve health outcomes, reduce health care costs, and be equipped to address health care reform changes brought by the Affordable Care Act, the State must prioritize chronic disease prevention and health promotion by investing in building a strong foundation for current and future chronic disease programs across the state.

The Patient Protection and Affordable Care Act created the Prevention and Public Health Fund, a 10-year, \$15 billion commitment to support programs, medical screenings, and research related to public health and prevention. The Affordable Care Act's (ACA) goal is to lower the rate of preventable chronic illnesses, produce real savings in the health care sector, and recover lost economic activity at the local, state, and national levels by investing in prevention of chronic disease. Prevention of Chronic Disease and Improving Public Health, Title IV of the Affordable Care Act promotes prevention, wellness, public health and health promotion efforts at the local, state and federal levels.⁸ For the fiscal year 2014, CDC awarded nearly \$212 million (first-year funding) to all states toward prevention and control of chronic diseases. The programs are expected to reduce morbidity and mortality attributable to diabetes, heart disease, stroke, and tobacco use and reduce obesity prevalence.⁹ Unfortunately, over the past five years, Nevada has fallen short in obtaining federal public health dollars due to various reasons including lack of capacity, coordination, and infrastructure.¹⁰ Specifically, Nevada

remains behind in obtaining federal chronic disease funding due to the lack of resources and capacity pertaining to epidemiology, program evaluation, surveillance, and evidence-based program development.

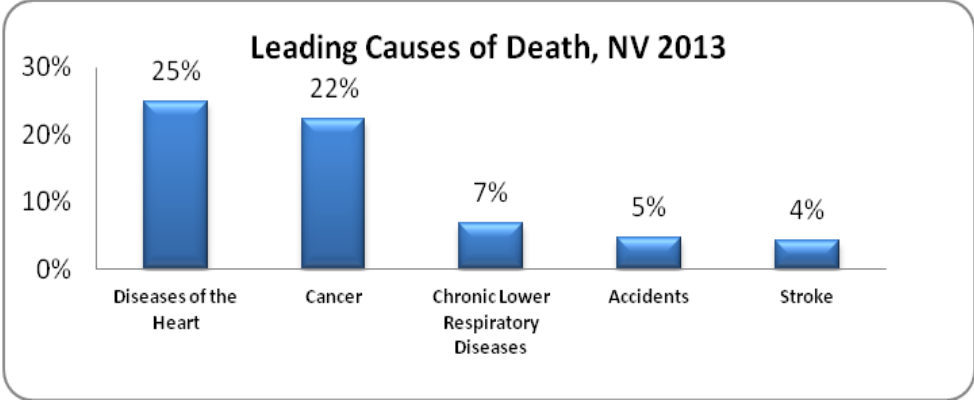
This document describes the current inadequate financial, programmatic, and workforce capacity in Nevada as it relates to public health chronic disease prevention and health promotion, and the dire need to invest in building capacity. Available literature supports the use of public health strategies, specifically chronic disease prevention, to address the chronic disease epidemic we are confronting in the Nation. The Centers for Disease Control and Prevention, the U.S. Preventive Services Task Force, and Healthy People 2020 recommend the use of chronic disease prevention and health promotion as critical connections in communities to address health-specific concerns, specifically in relation to the prevention and management of diseases. Public health chronic disease prevention and health promotion, if well capacitated, can utilize key expertise linked to the ten essential public health services, including: evaluation, epidemiology, health promotion, clinical and community linkages, and policy and environmental changes. The use of public health chronic disease prevention and health promotion in intervention programs has been associated with improved health care access, client health status, health- and screening-related behaviors; improved environments that impact health; as well as reduced health care costs.¹¹ Chronic disease prevention and health promotion activities have been a major driver for initiatives that have lowered the prevalence of smoking among U.S. adults (from 45% in 1950 to 19.0% in 2013¹), preventing countless cases of lung cancer, emphysema, and chronic obstructive pulmonary diseases.¹²

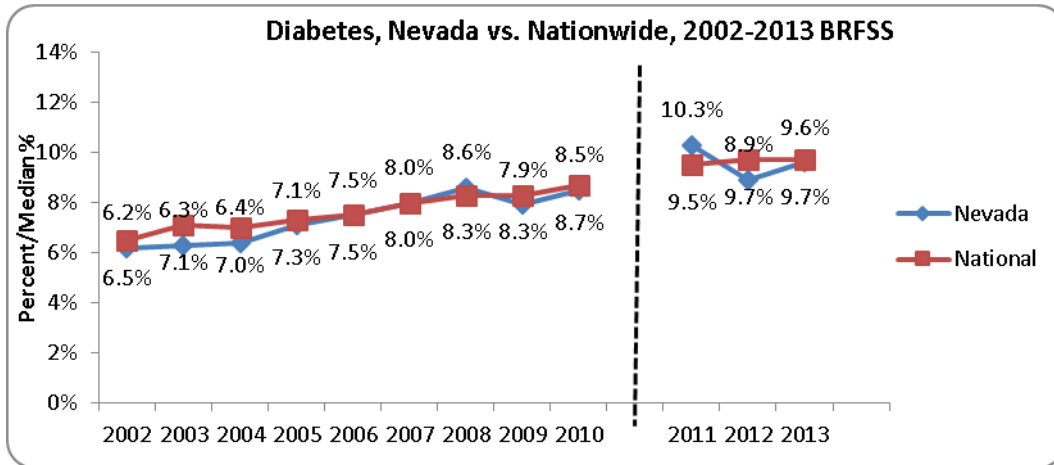
The ACA has provided the opportunity for chronic disease prevention and health promotion to link with health systems, communities, and public health to improve quality measures, promote population-based, evidence-based practices and innovative health education models pertaining to the prevention and management of chronic disease. However, in order for Nevada to succeed, chronic disease prevention and health promotion investments, including staff capacity, infrastructure, and public health workforce development must be made. By investing in chronic disease prevention and health promotion, Nevada will produce healthier communities that can increase productivity, reduce direct (e.g., medical claims) and indirect (e.g., absenteeism) costs, and improve health outcomes.¹³

Problem Statement

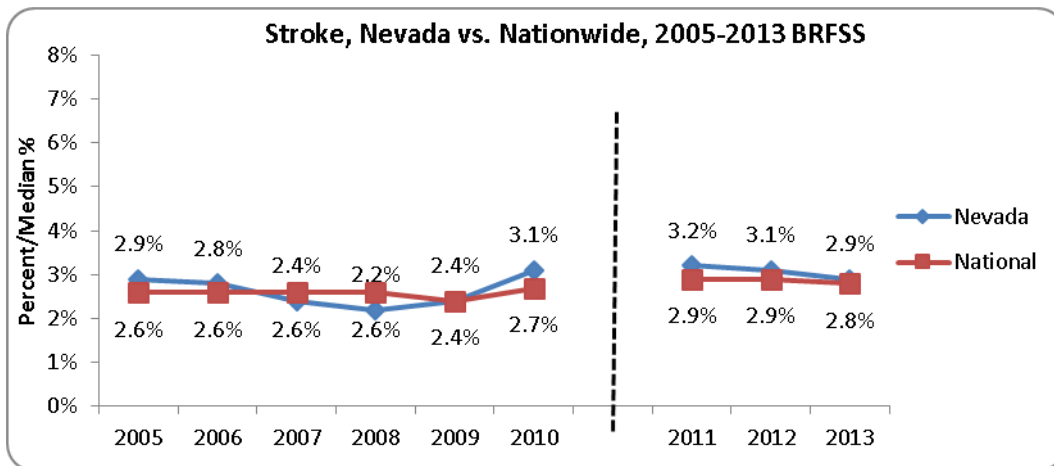
The prevalence of chronic health conditions in the United States is taking a huge toll on our citizens, our nation’s health care spending, and our workforce. More than half of the people living in the United States have at least one chronic health condition, such as heart disease, stroke, diabetes, obesity, and cancer. In 2012, chronic health conditions accounted for 7 out of 10 deaths in America.¹⁴ In addition, 84% of health care spending in 2006 was on chronic conditions.⁷ In 2012, the estimated total cost for heart disease and stroke was \$314.4 billion of which \$193.4 was for direct medical costs.¹⁵ Additionally, the total costs for diagnosed diabetes increased from \$174 billion in 2007 to \$245 billion in 2012.¹⁶

In 2013, leading causes of death in Nevada were diseases of the heart, cancer, chronic lower respiratory diseases, accidents, and cerebrovascular diseases (stroke). Diseases of the heart, cancer, and stroke accounted for over half (51%) of deaths. The age-adjusted death rates for diseases of the heart cancer, and stroke were 199.2, 166.9, and 3.7 per 100,000 Nevada population respectively.





Note: BRFSS methodology changed in 2011; therefore, it may be misleading to compare statistics before and after the methodology change

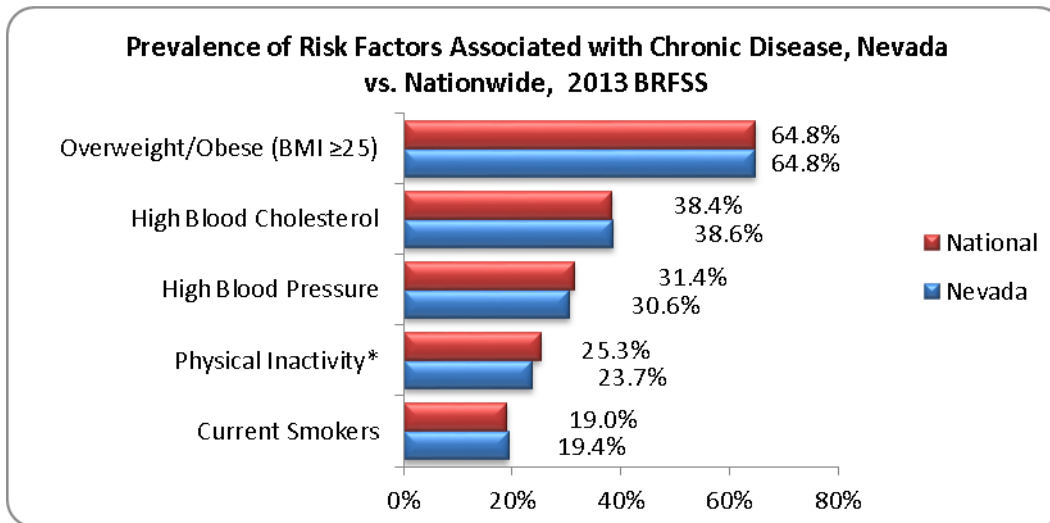


Note: BRFSS methodology changed in 2011; therefore, it may be misleading to compare statistics before and after the methodology change.

Modifiable Risk Factors

Leading a healthy lifestyle (avoiding tobacco use, being physically active, and eating well) greatly reduces a person's risk for developing chronic disease.¹⁵ These six modifiable risk factors or behaviors have been directly linked to chronic disease:

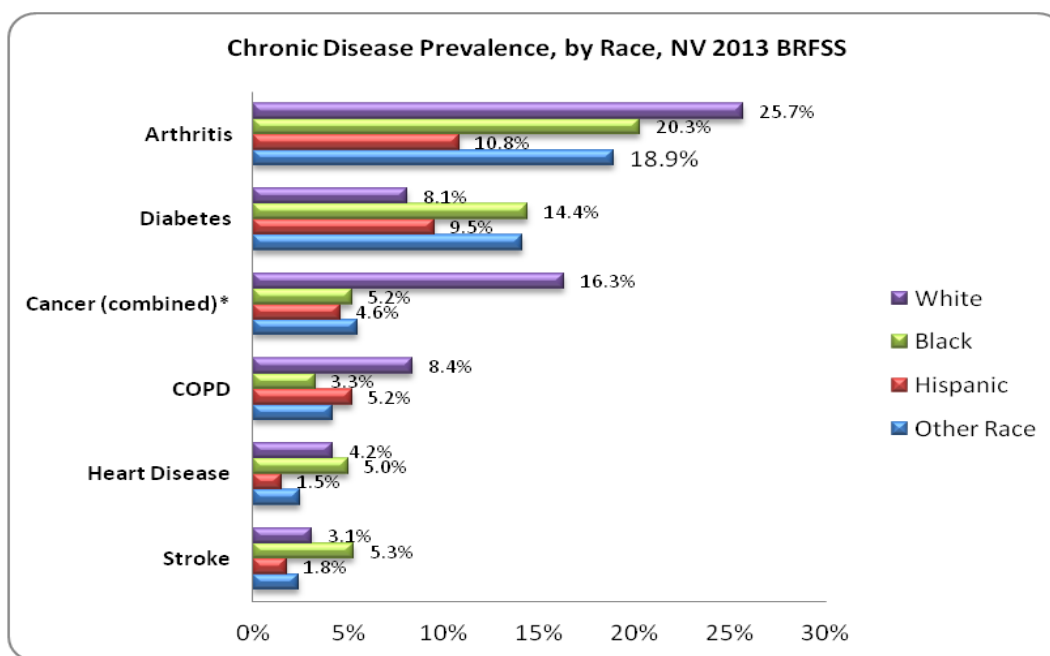
- 1) Physical inactivity
- 2) Overweight and obesity
- 3) Tobacco and nicotine use
- 4) Poor nutrition
- 5) Hypertension (high blood pressure)
- 6) Dyslipidemia (high cholesterol)



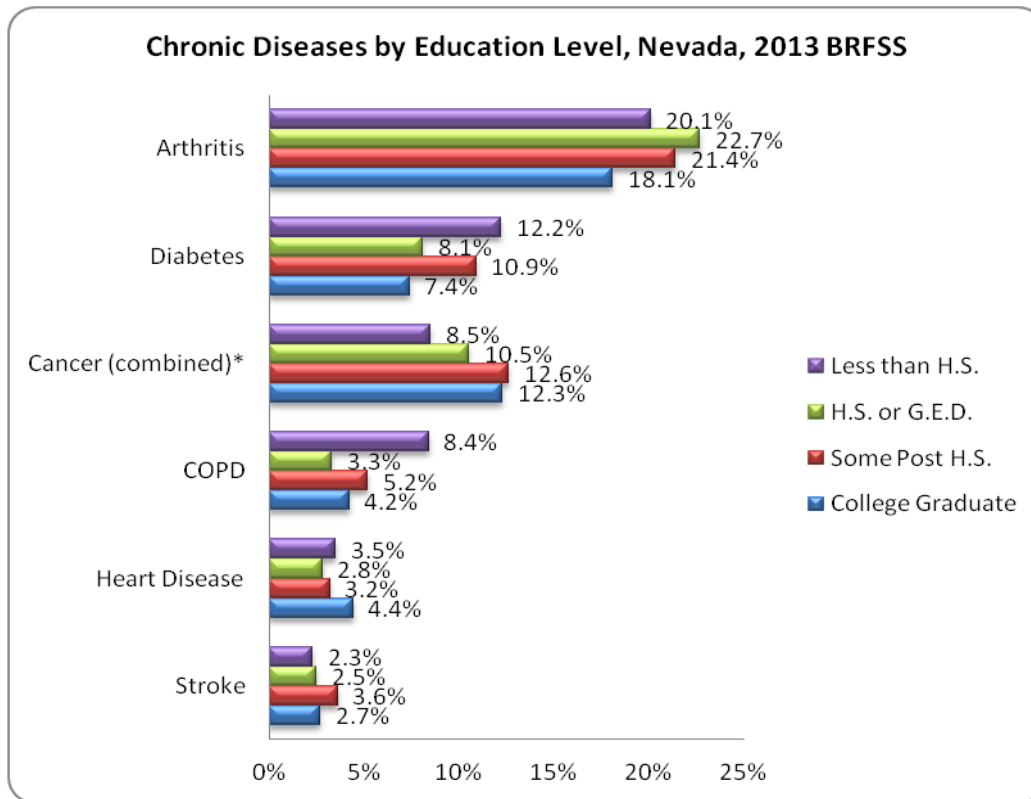
Note: *Physical inactivity is “no” response to the question: “During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?”

Chronic Disease Risk Disparities

Nevada is experiencing growing health disparities for chronic diseases such as heart disease, stroke, cancer, arthritis, and diabetes.¹⁷ Importantly, health disparities are prominent among underserved and ethnic minority populations because of the greater number of common barriers these communities are likely to encounter. Members of these communities tend to have poorer health, shorter life expectancy, and are more prone to certain chronic diseases as compared to their white counterparts.¹⁸



*Note: “Cancer (combined)” refers to skin and other types of cancer.

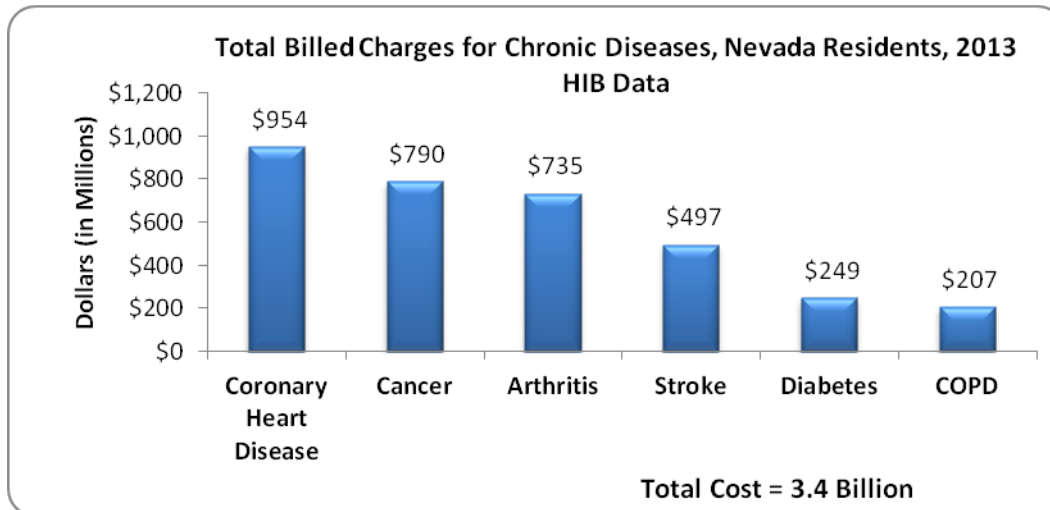


Economic Burden of Chronic Disease

The rising rate of chronic disease is a crucial but frequently ignored contributor to increasing medical expenditures. Nevada faces staggering financial costs associated with chronic disease despite the relatively low population density. This section estimates the current and future treatment costs and loss of productivity for the following six major chronic conditions: arthritis, combined cancers, chronic obstructive pulmonary disease, diabetes, heart disease, and stroke. The estimates are conservative because the focus is only on the costs attributed directly to the treatment of each disease and excludes the costs of co-morbidities and other related health conditions, as well as costs for individuals in nursing homes, prisons, and other institutions.²

Direct Costs

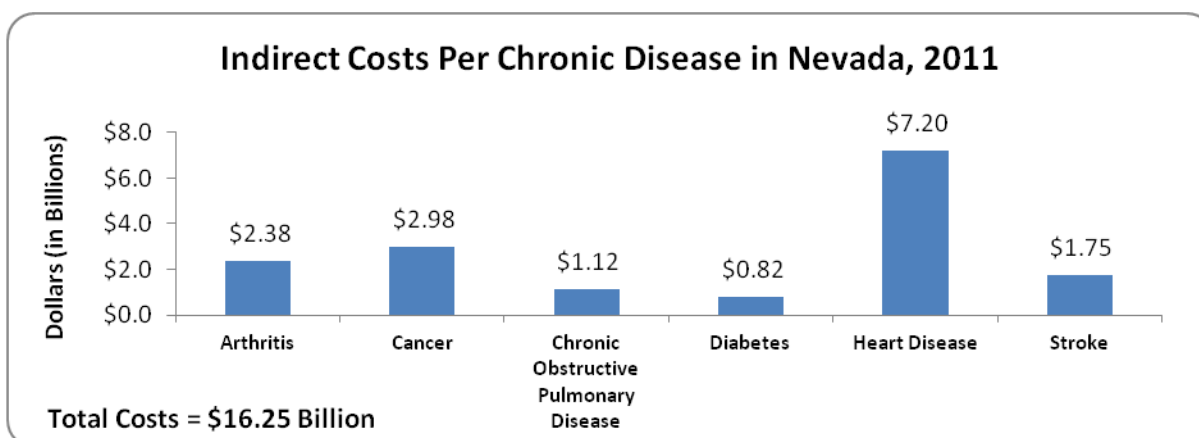
The following diagram illustrates the total direct costs associated with chronic diseases, based on total charges incurred by patients during hospital stays:



Source: Office of Public Health Informatics and Epidemiology. Nevada Division of Public and Behavioral Health. 2013 Nevada Hospital Inpatient Data.

Indirect Costs

Direct costs are not the only representation of the economic burden chronic diseases place on Nevada; indirect costs represent the productivity losses due to illness and premature death.¹⁹ The DeVol, Ross and Bedroussian study which is endorsed by the CDC and used by the Milken Institute, calculated that productivity losses are approximately four times greater than the direct medical cost of chronic disease. Furthermore, years of potential life lost (YPLL) for the population in Nevada was calculated for persons under the age of 75 for 2011. Diseases of the heart and malignant neoplasms account for over 64,000 total years lost in Nevada annually.



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

Presenteeism

Good health is a vital component of individual well-being, and it also plays a large role in employee productivity. Presenteeism occurs when ill or injured employees go to work to avoid taking sick leave and do not perform well.¹⁹ Nicholson et. al., reported that output loss due to presenteeism is immense, and with some diseases it can be as high as fifteen times greater than absenteeism, which is defined as work missed due to sick days.²⁰ The chart below depicts the estimated total economic burden as follows: direct costs, indirect costs (using CDC-approved DeVol equation of four times direct costs), and total costs (the sum of direct and indirect costs).¹⁹ Also shown is the projected total estimated economic burden for Nevada for 2023 if nothing is changed or implemented to prevent or focus on reducing the incidence of chronic diseases.

Total Economic Burden in Nevada			
	Direct Costs	Indirect Costs	Total Estimated Economic Burden
2003	\$1,900,000,000	\$7,500,000,000	\$9,400,000,000
2011*	\$4,062,820,904	\$16,251,283,616	\$20,314,104,520
2023	\$9,100,000,000	\$36,400,000,000	\$45,500,000,000

Source: Milken Institute, The Economic Burden of Chronic Disease on Nevada, 2007.

Analysis used the Medical Expenditure Panel Survey (MEPS) data from 2003, the most recent year available at time of analysis.

*Numbers calculated from Economic Burden of NV section

Chronic Disease Prevention and Health Promotion Capacity

Geographically, Nevada is considered the 7th largest state in the nation. The state is comprised of 17 counties covering 110,540 square miles of land²¹ and is comprised of 3 urban counties (Clark, Washoe, and Carson City), 3 rural counties (Storey, Lyon, and Douglas) and 11 frontier counties.²² According to Nevada State Demographer's 2014 population estimates, Urban counties comprise 90% and rural/frontier counties comprise 10% of Nevada's population.²³ Nevada has experienced the highest population growth among U.S. States, increasing by nearly 34% between 2000 and 2010 and the population is expected to grow by 9.6% between 2010 and 2020.²³ Demographically, 37% of Nevadans are between the ages of 18 and 44, 14% are middle aged (45-54) and 42% are 55 years of age or older.²⁴ In terms of education, only 29% of Nevadans have a college degree and over half of Nevadans (58%) have an earned household income of \$50,000 or more.²⁵ Nevada is rapidly becoming more diverse in terms of race/ethnic/cultural characteristics and is one of the nine states that the United States Census Bureau anticipates becoming a "majority minority" state in the upcoming decade.²³

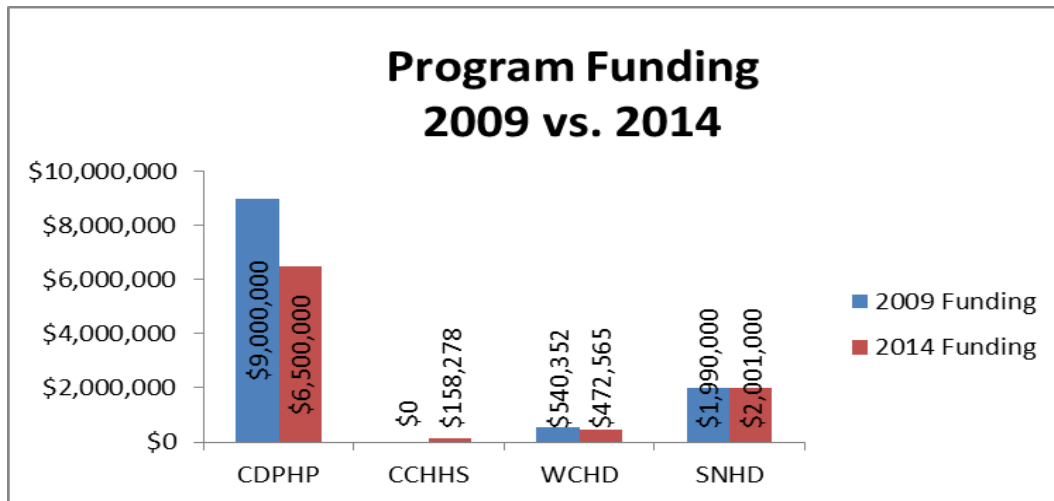
Nevada has three counties, Clark, Washoe, and Carson City, which have local health departments with Chronic Disease Prevention and Health Promotion programs. These three

counties represent the majority (91.4%) of Nevada's population and have high percentage of individuals who are at greater risk of cardiovascular disease and diabetes. In 2013, the diabetes prevalence estimates for Clark County and Washoe County were 10.2% and 7.8% respectively.¹ In addition, during the same year, coronary heart disease prevalence estimates for Clark County and Washoe County were 3.1% and 3.7% respectively. The differences were not statistically significant. Due to low counts, the prevalence estimates for Carson City are unreliable.

In 2013, the death rates for diseases of the heart in Carson City, Clark County, and Washoe County were 203.2, 193.9 and 234.9 per 100,000 population respectively.²⁶ The difference between Washoe County and Clark County was statistically significant. During the same time period, the death rates for cancer in Carson City, Clark County, and Washoe County were 203.8, 163.0 and 182.4 per 100,000 population respectively. The difference between Carson City County and Clark County was statistically significant. During the same time period, the death rates for stroke in Carson City, Clark County, and Washoe County were 41.8, 33.6 and 33.9 per 100,000 population respectively. The differences between the three counties were not statistically significant. In all three counties, diseases of the heart, cancer, and stroke were among the top five leading causes of death.

In summary, heart disease, stroke, cancer, diabetes and COPD are among the most common, costly, and preventable disease in Nevada. In 2013, over half a million Nevadans had at least one chronic disease and one-in-five Nevadan's had more than one chronic condition. These five chronic diseases accounted for 61% percent of the deaths in Nevada in 2013. During the same time period, 65% percent of adults in Nevada were either obese (531,266) or overweight (783,069) and 19% were current smokers.¹ This translates into an annual estimated cost of \$20.3 billion dollars due to chronic disease in Nevada. ² To make matters worse, the state only has four chronic disease prevention and health promotion departments in place, with approximately \$9.1 million dollars combined to invest in chronic disease prevention and health promotion initiatives.

In August 2014, the Division of Public and Behavioral Health conducted a survey with Chronic Disease Prevention and Health Promotion Departments in Carson City Health and Human Services (CCHHS), Washoe County Health District (WCHD), Nevada State Chronic Disease Prevention and Health Promotion (CDPHP) Section and Southern Nevada Health District (SNHD) to assess their current program, budget, and staffing levels. The survey findings revealed that on average, Chronic Disease Departments had more staff and funding in 2009 than in 2014. Additionally, the vast majority of funding comes from federal grants. The survey demonstrated a lack in program capacity pertaining to the top chronic diseases; stroke and diseases of the heart, diabetes, and cancer.



2014 Funding and FTEs in Place by Department				
	CDPHP	CCHHS	WCHD	SNHD
Administrative (includes management, evaluation, and administrative support)	8			2
Tobacco Program	Yes	Yes	Yes	Yes
Tobacco Funding	Yes	Yes	Yes	Yes
Tobacco Staff in Place	Yes (2 FTE)	Yes (0.6 FTE)	Yes (1.5 FTE)	Yes (3.5)
Diabetes Program	Yes	No	No	Yes
Diabetes Funding	Yes	No	No	Yes
Diabetes Staff in Place	Yes (1 FTE)	No	No	Yes (0.75 FTE)
Heart Disease & Stroke Program	Yes	No	No	Yes
Heart Disease and Stroke Funding	Yes	No	No	No
Heart Disease and Stroke Staff in Place	Yes (1 FTE)	No	No	No
Cancer Programs (includes comp & breast and cervical)	Yes	Yes	No	Yes
Cancer Funding	Yes	No	No	No
Cancer Staff in Place	Yes (4 FTE)	No	No	No
Obesity Prevention and Control Program	Yes	No	Yes	Yes
Obesity Program Funding	Yes	No	Yes	Yes
Obesity Staff in Place	Yes (1 FTE)	No	Yes (1.5 FTE)	Yes (4.5 FTE)
School Health Program	Yes	No	No	Yes
School Health Funding	Yes	No	No	No
School Health Staff in Place	Yes (1 FTE)	No	No	No

2014 Funding and FTEs in Place by Department

	CDPHP	CCHHS	WCHD	SNHD
Arthritis Program	No	No	No	Yes
Arthritis Funding	No	No	No	No
Arthritis Staff in Place	No	No	No	No
Asthma Program	No	No	No	Yes
Asthma Funding	No	No	No	No
Asthma Staff in Place	No	No	No	No
Oral Health Program	No	No	No	No
Oral Health Funding	No	No	No	No
Oral Health Staff in Place	No	No	No	No
Injury Prevention Program	No	No	No	Yes
Injury Prevention Funding	No	No	No	Yes
Injury Staff in Place	No	No	No	Yes (1 FTE)
HIV/AIDS Program	No	Yes	No	Yes
HIV/AIDS Funding	No	Yes	No	No
HIV/AIDS Staff in Place	No	Yes (1 FTE)	No	No
CHW Program	Yes	No	No	No
CHW Staff in Place	Yes (1 FTE)	No	No	No
CHW Funding	Yes	No	No	No

The lack of capacity and resources have fundamentally affected the ability of the four Chronic Disease Departments to provide comprehensive programming and services. For instance, because departments have limited staff, this impedes their ability to write grant applications or finance programs and staff pertaining to asthma, stroke and heart disease. In addition, while the population has grown rapidly since the mid-1990's, the number of full time chronic disease employees has not. For example, the current population of Clark County is 2,027,868. With only 12 FTEs, that is 1 Health Educator/168,989 people. A lack of consistent dedicated funding results in a lack of assurance of program and staff sustainability.

Despite being confronted with funding and staffing barriers, the four departments have been able to foster strong partnerships with community partners to provide health education regarding prevention of chronic diseases and as well as foster policy, system and environmental changes to support people trying to implement healthy choices. Although many departments have small teams, they frequently meet or exceed grant deliverables and provide community initiatives that result in positive health outcomes. In 2013, the prevalence estimates for youths who smoked cigarettes on at least one day during the 30 days before the survey in Nevada, Clark, and Washoe, were 10.2%, 7.8%, and 14.3% respectively.²⁷ According to the Behavioral

Risk Factor Surveillance System (BRFSS), adult smoking prevalence estimates have decreased from 29.0% in 2010 to 21.3% in 2010 and from 22.9% in 2011 to 19.4% in 2013.¹ In addition, BRFSS methodology changed in 2011, therefore, it may be misleading to compare statistics before and after the methodology change. Finally, Carson City has participated in updating Carson City's no smoking policy to include e-cigarettes (two of Carson City's largest employers have no smoking policies), and has partnered with a local coalition to address youth smoking.

Over the last few years, the four chronic disease departments have been catalysts for changes to promote chronic disease prevention in Nevada by providing leadership, coordination, and technical assistance to foster policy, system and environmental changes pertaining to tobacco prevention, promotion of physical activity, and healthy eating. In spite of their contributions, there has been limited recognition and support for public health chronic disease prevention and health promotion in the State. Even with a growing body of evidence for the effectiveness of public health chronic disease prevention and health promotion, only about four cents of every health dollar is spent on prevention and public health.³ In 2014, Nevada ranked 49th in state public health spending per capita, 31st in federal funding from the Centers for Disease Control and Prevention (CDC), and 49th in federal funding from the Health Resources and Services Administration (HRSA).⁴ In order for Nevada to improve health outcomes, reduce the costs of care, and be equipped to address health reform changes brought by the Affordable Care Act, the State must prioritize chronic disease prevention and health promotion by affirming the foundation of current Chronic Disease Departments across the state through financial investments.

Strategies to Build Capacity

It is increasingly recognized that individual health depends on societal health and healthy communities. In addition to having strong medical care systems, public health builds healthy communities that promote and protect health across the lifespan, through a range of policies, systems and environmental supports that put health in the people's hands.²⁸ In order for this to be a reality in Nevada, it is essential for the public health chronic disease sector to have a strong foundation. In order to build the capacity of chronic disease prevention and health promotion, the four Chronic Disease Departments in Nevada have identified six key domains to organize around over the next five years. These are:

1. Evaluation and Epidemiology
2. Health Education and Promotion
3. Community and Clinical Linkages
4. Health System Interventions
5. Policy and Environmental Changes
6. Leadership and Management Capacity

Transforming the state's health and providing Nevadans with equitable opportunities to take charge of their health requires work within these six key domains. These domains coincide with national standards and priorities set by Healthy People 2020, the Centers for Disease Control and Prevention, and the U.S. Preventive Services Task Force. As such, the four Chronic Disease Prevention and Health Promotion Departments will incorporate these six priorities, based on funding and capacity, to address the epidemic of chronic disease in Nevada. Since many reports tout the important roles staff and leadership play in ensuring the delivery of quality and culturally competent preventative and health promotion services, the four departments also seek to foster training and capacity-building activities to support the infrastructure, development, and sustainability of a strong and effective chronic disease workforce in Nevada.

Evaluation & Epidemiology

Responsible use of data and information includes informing decision makers and the public of the effectiveness of preventive interventions to ease the burden of chronic diseases and their associated risk factors, public health impact, and program effectiveness. Making the investment in epidemiology and evaluation provides Nevada with the necessary expertise to collect data and information and to develop and deploy effective interventions, identify and address gaps in program delivery, and monitor and evaluate progress in achieving program goals.²⁹ At a minimum, the four Chronic Disease Departments will:

- Implement program evaluation activities to track the impact of programs and investments.
- Promote the development of standardized data elements regarding chronic diseases and associated risk factors.
- Establish profiles of chronic diseases and risk factors utilizing electronic health records.
- Develop profiles of high risk populations by region.

Health Education and Promotion

Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions.³⁰ Health promotion is the development of individual, group, institutional, community and systemic strategies to improve health knowledge, attitudes, skills and behavior. The purpose of health promotion is to positively influence the health behavior of individuals and communities as well as the living and working conditions that influence their health. Examples include:

- Promote worksite wellness initiatives targeting business.
- Develop social marketing and mass media campaigns focused on the negative health impacts of tobacco.
- Plan health education programs for the prevention and management of pre-diabetes, tobacco cessation, cancer screenings, and hypertension.
- Advocate for healthy environments that promote walking, smoke-free settings, and healthy eating.

Community and Clinical Linkages

Community-clinical linkages help ensure that people with or at high risk of chronic diseases have access to community resources and support to prevent, delay, or manage chronic conditions once they occur.²⁸ Below are key activities the four departments will mobilize around:

- Advocate for diabetes prevention programs and tobacco quitline cessation services to be covered and promoted benefits for employees.
- Increase use of self-management programs in community settings: chronic disease self-management (CDSMP) and diabetes self-management (DSME).
- Increase cancer screening programs among low-income communities.
- Increase use of the CDC-approved, evidence-based lifestyle change program to prevent or delay onset of type 2 diabetes among people at high risk.
- Promote Community Health Workers in the state.

Health System Interventions

Health systems interventions improve the clinical environment to more effectively deliver quality preventive services and help Americans more effectively use and benefit from those services. One must use organized systems of care to deliver high-quality clinical and other preventive services, as recommended by the U.S. Preventive Services Task Force and the Community Guide. As a result, some chronic diseases and conditions will be prevented, and others will be detected early or better managed to avert complications and progression and improve health outcomes. Activities include:

- Foster quality improvement of clinical care relating to cancer screening, diabetes (control of A1C), blood pressure screening and monitoring, and body mass index screening and monitoring.
- Promote professional development for clinical staff around chronic disease standards of care.
- Identify and support delivery of clinical services for smoking cessation, cancer screening, pre-diabetes management, and hypertension screening and management.
- Promote health care information systems with automated physician prompts or patient reminder letters for screening and follow-up clinical counseling or referral.

Policy and Environmental Changes

Where you live influences how you live - it's more difficult to make healthy decisions if healthy options aren't readily available. Policy, systems and environmental change is a way of modifying the environment to make healthy choices practical and available to all community members. By changing laws and shaping physical landscapes, a big impact can be made with little time and resources. Thus, communities can help tackle health issues like tobacco, obesity, diabetes, cancer and other chronic diseases in Nevada. Key activities include:

- Develop and implement nutrition standards for food and beverages offered in settings including state, local and tribal governments, private sector businesses, schools, child care and education facilities, senior centers and other facilities serving older adults, and other settings.
- Develop and implement comprehensive smoke-free air policies in workplaces and public places; smoke-free policies in multi-unit housing and outdoor areas; and tobacco-free campus policies for colleges, workplaces, and health care settings, among others.
- Increase the amount of daily, quality physical education in schools and through standards in early care/after school settings.
- Increase access to physical activity for employees through worksite wellness initiatives.

- Foster inclusion of Complete Streets elements in community master plans to support active transportation.

The four Chronic Disease Departments will take a comprehensive approach toward incorporating these six domains into programs, financial investments, and staff development. By aligning the four departments around these domains and evidence-based practices promoted by national quality organizations, Nevada will be better positioned to leverage resources, funding, and thus build long term capacity to address the burden of chronic disease.

Recommendations

The U.S. Preventive Services Task Force states “access to high-quality prevention measures are essential steps in saving lives, reducing disability and lowering costs for medical care.”³¹ Research has proven that for every dollar invested in effective prevention and public health initiatives, \$5.60 is saved. The same study reveals that, if we invest \$10 per person every year in effective community-based public health programs, we could save the United States more than \$16 billion in just five years.³² If Nevada were to invest similarly, \$10 per person in prevention and promotion activities, this would translate into approximately 28 million dollars based on Nevada’s population. If this funding allotment became a reality, investments should be made in supporting the infrastructure of the Chronic Disease Prevention and Health Promotion State Plan goals, which encompasses the six domains discussed on page seventeen. Specifically, a comprehensive approach should be considered that makes financial investments into chronic disease prevention and health promotion programming, leadership, and evaluation.

Chronic disease prevention and health promotion leadership in Nevada is critical to the success of comprehensive chronic disease prevention and health promotion efforts. Attracting competent leadership and investing in staff development in Nevada is necessary to sustain program efforts and support the implementation of planned activities. Nevada must develop the capacity to manage evidence-based programs and secure the necessary resources to do so, including the technical expertise needed to plan, implement, and evaluate interventions in a variety of settings. In addition, Nevada needs to invest in the implementation of evidence-based programs. All public health programs, policies, and educational efforts should be funded if they are based on the best available scientific evidence. Without science, public health merely functions as an opinion. Finally, a dependence on science requires a strong ethic of, and commitment to, evaluation. Investments should be made to periodically review progress toward accomplishing the goals and objectives in program plans to determine whether activities or resources need to be redirected.

The above recommendations are based on prevention effectiveness research; program evaluations; and the expert opinions of national, state, and local leaders and public health practitioners, including the Centers for Disease Control and Prevention. Investing in the infrastructure, workforce and evidence-based programming will strengthen Nevada’s capacity to meet 21st century challenges to improve quality of life, increase productivity and help to control health care spending.

Conclusion

Chronic disease continues to be one of the major public health challenges of the twenty-first century. The incidence and impacts of preventable diseases can be largely reduced with an approach that incorporates public health prevention and health promotion, public and private partnerships, and system centered, population-wide interventions. By focusing on the most prevalent chronic diseases (heart disease, stroke and diabetes) and addressing behaviors that contribute to these conditions (tobacco use, poor diet, and physical inactivity), we can make a profound impact in reducing the harm caused by chronic disease. However, this cannot happen unless we make a considerable effort to invest in chronic disease prevention and health promotion in the state. Nevada must have the public health chronic disease prevention and management workforce in place in order to cut cost and improve health outcomes. Investments in evaluation, system changes, clinical and community linkages, as well as health system collaborations will improve coordination of care and health access. Investments must be made now, to meet the demands of the Affordable Care Act and secure the health of Nevadans in the future. Nevada must make measurable contributions to the prevention and control of chronic disease – and by doing so, it will improve quality of life, improve the health of future generations, increase productivity and help control health care spending.

References

1. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Survey Data. 2013. Accessed February 5, 2015.
2. Whitehill J, Flores M, Mburia-Mwalili A. The Burden of Chronic Disease in Nevada. 2013; http://www.health.nv.gov/PUBLICATIONS/CD/2013_BurdenOfChronicDiseaseInNevadaReport.pdf. Accessed January 28, 2015.
3. Alliance for Health Reform. Preventing Chronic Disease: The New Public Health. . 2011; http://www.allhealth.org/publications/Public_health/Preventing_Chronic_Disease_New_Public_Health_1_08.pdf. Accessed October 24, 2014.
4. Trust for Americans' Health. Key Health Data About Nevada. 2014; <http://healthyamericans.org/states/?stateid=NV#section=3,year=2014,code=undefined>. Accessed October 21, 2014.
5. Sargent Shriver National Center on Poverty Law. The Shriver Brief: The Affordable Care Act: Preventing Chronic Diseases. 2012; <http://www.theshriverbrief.org/2012/02/articles/health-care-justice/the-affordable-care-act-preventing-chronic-diseases>. Accessed December 14, 2014.
6. National Research Council and Institute of Medicine. U.S. Health in International Perspective: Short Lives, Poorer Health. 2013; <http://www.iom.edu/Reports/2013/US-Health-in-International-Perspective-Shorter-Lives-Poorer-Health.aspx>. Accessed October 21, 2014.
7. Robert Wood Johnson Foundation. Chronic Care: Making the Case for Ongoing Care. 2010; <http://www.rwjf.org/content/dam/farm/reports/reports/2010/rwjf54583>. Accessed February 9, 2015.
8. U.S. Department of Health and Human Services. Affordable Care Act. Title IV. Prevention of Chronic Disease and Improving Public Health. 2015; <http://www.hhs.gov/healthcare/rights/law/index.html>. Accessed February 9, 2015.
9. Centers for Disease Control and Prevention. CDC Announces FY 2014 Funding Awards for Chronic Disease Prevention and Health Promotion. 2014; <http://www.cdc.gov/chronicdisease/about/2014-foa-awards.htm>. Accessed October 9, 2015.
10. Gustafson C, Ouellette J. Competing for Federal Grant Dollars in Nevada. 2014; <http://www.unlv.edu/sites/default/files/24/Lincy-NVFederalCompetitivenessFullReport.pdf>. Accessed February 9, 2015.
11. National Prevention Council. National Prevention Strategy: America's Plan for Better Health and Wellness. 2011; <http://www.surgeongeneral.gov/initiatives/prevention/strategy/report.pdf>. Accessed October 21, 2014.
12. American Lung Association. Trends in Tobacco Use. 2011; <http://www.lung.org/finding-cures/our-research/trend-reports/Tobacco-Trend-Report.pdf>. Accessed December 15, 2014.
13. National Prevention Council. National Prevention Council Action Plan: Implementing the National Prevention Strategy. 2012; <http://www.surgeongeneral.gov/initiatives/prevention/2012-npc-action-plan.pdf>. Accessed October 22, 2014.
14. Xu JQ, Kochanek KD, Murphy SL, Arias E. Mortality in the United States, 2012. NCHS data brief, no 168. 2014; <http://www.cdc.gov/nchs/data/databriefs/db168.pdf>. Accessed February 9, 2015.
15. American Heart Association. Heart Disease and Stroke Statistics—2014 Update. 2014; <http://circ.ahajournals.org/content/early/2013/12/18/01.cir.0000441139.02102.80.full.pdf>. Accessed October 23, 2014.
16. American Diabetes Association. The Cost of Diabetes. 2013; <http://www.diabetes.org/advocacy/news-events/cost-of-diabetes.html>. Accessed October 23, 2014.
17. Office of Public Health Informatics and Epidemiology. Nevada Division of Public and Behavioral Health. Nevada Behavioral Risk Factor Surveillance System 2011 Annual Report (2011 Data). 2013; http://health.nv.gov/PUBLICATIONS/2011_BRFSS_Annual_Report_e_1.0_2013-10-24.pdf. Accessed February 9, 2015.

18. Centers for Disease Control and Prevention. CDC Health Disparities and Inequalities Report — United States, 2011. MMWR;60(Suppl). 2011; <http://www.cdc.gov/mmwr/pdf/other/su6001.pdf>. Accessed October 23, 2014.
19. Devol R, Bedroussian A. An Unhealthy America: The Economic Burden of Chronic Disease. 2007; http://www.fightchronicdisease.org/sites/fightchronicdisease.org/files/docs/ChronicDisease_ExecSumFINAL.pdf. Accessed October 23, 2014.
20. Nicholson S, Pauly MV, Polsky D, Sharda C, Szrek H, Berger ML. Measuring the effects of work loss on productivity with team production. *Health economics*. Feb 2006;15(2):111-123.
21. U.S. Census Bureau. 2010 Census Summary File 1: GCT-PH1 - Population, Housing Units, Area and Density: 2010 - State -- County Equivalent. Generated by Adel Mburia-Mwalili. <http://factfinder2.census.gov>. Accessed February 5, 2015.
22. Nevada State Office of Rural Health. University of Nevada School of Medicine. Nevada Rural and Frontier Health Data Book. 2013; <http://medicine.nevada.edu/Documents/unsom/statewide/rural/data-book-2013/Introduction.pdf>. Accessed February 5, 2015.
23. Nevada State Demographer. Estimates. 2014; <http://nvdemography.org/data-and-publications/estimates/estimates-by-county-city-and-unincorporated-towns/>. Accessed February 5, 2015.
24. U.S. Census Bureau. 2009-2013 American Community Survey 5-Year Estimates. Table S0101; generated by Adel Mburia-Mwalili; using American FactFinder. <http://factfinder2.census.gov>. Accessed February 5, 2015.
25. U.S. Census Bureau. 2009-2013 American Survey 5-Year Estimates, Table S1901; generated by Adel Mburia-Mwalili; using American FactFinder. <http://factfinder2.census.gov>. Accessed February 5, 2015.
26. Office of Public Health Informatics and Epidemiology. Nevada Division of Public and Behavioral Health. 2013 Mortality Statistics (Preliminary). Carson City, Nevada.
27. Division of Public and Behavioral Health. Office of Public Health Informatics and Epidemiology. Nevada Youth Risk Behavior Survey. 2013; <http://chs.unr.edu/subpages/research/documents/2013NevadaYRBSReportFinal10142014.pdf>. Accessed February 5, 2015.
28. Centers for Disease Control and Prevention. Chronic Disease Prevention and Health Promotion: Public Health Approach. 2015; <http://www.cdc.gov/chronicdisease/about/public-health-approach.htm>. Accessed November 10, 2014.
29. Centers for Disease Control and Prevention. CDC's Evaluation Efforts. <http://www.cdc.gov/eval>. Accessed August 12, 2014.
30. World Health Organization. Health Promotion. 2015; http://www.who.int/topics/health_promotion/en/. Accessed October 23, 2014.
31. Ockene JK, Edgerton EA, Teutsch SM, et al. Integrating evidence-based clinical and community strategies to improve health. *Am J Prev Med* 2007; 2007/02/14:244-252. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Name/integrating-evidence-based-clinical-and-community-strategies-to-improve-health>. Accessed February 26, 2015.
32. U.S. Department of Health and Human Services. Prevention Makes Common "Cents". 2003; <http://aspe.hhs.gov/health/prevention/>. Accessed November 11, 2014.