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The Social Health of Nevada

Leading Indicators and Quality of Life in the Silver State

Disease Prevalence and Health Determinants in Nevada

Takashi Yamashita, Ph.D., MPH., MA. *Department of Sociology, Anthropology, and Health Administration and Policy, University of Maryland Baltimore County*
Roberto Millar, BA. *Gerontology Doctoral Program, University of Maryland Baltimore County, University of Maryland Baltimore*

In this report, we use recent data to describe the health of Nevada and update the previous report (Monnat, 2012) on health outcomes and health determinants in the Silver State. Data for this report are mainly obtained from the County Health Rankings, America's Health Rankings, and the 2016 Center for Disease Control and Prevention's Division of Nutrition, Physical Activity, and Obesity report.

In line with the previous report by Monnat (2012), we reference Nevada's disease prevalence in relation to the U.S. average and other states, as well as disease distribution among counties in Nevada. We also compaire health indicators in the U.S. with those in other countries, discuss the health determinants and examine their impact on Nevadans' health. The chapter concludes with the recommendations on strategies to improve health of Nevada residents. Additional resources include the national, state and community public health organizations (Appendix 1) and examples of public health related legislative actions in Nevada (Appendix 2).

Highlights

- Nevada is ranked 35th in overall health among all states in the U.S.
- One in tree Nevadans is obese or affected by hypertension, heart disease, or stroke.
- Nevada has the second highest violence and crime rates per capita.
- The state has the second lowest high school graduation rate in the nation.
- Nevada is among the bottom five states in number of primary care physicians.

How to Cite this Report

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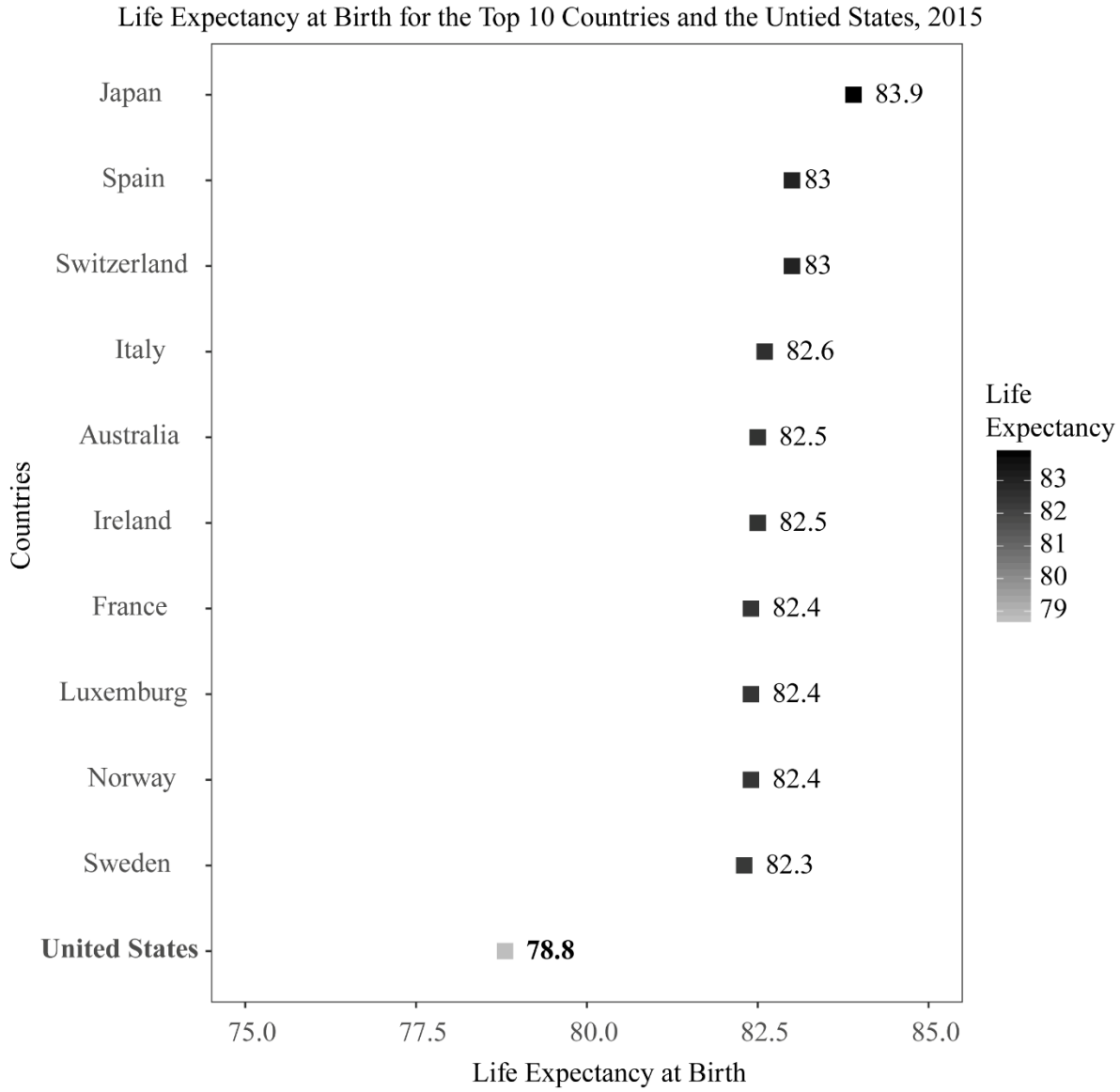
In the last several decades, there has been growing interest in how modifiable risk factors contribute to disease and mortality rates. Studies point to five key domains as the principal determinants of health: (a) genetic predisposition, (b) social circumstances, (c) environmental conditions, (d) health behaviors, and (e) medical care. It is estimated that as much as 60% of disease risk is attributable to modifiable factors, such as health behaviors, social circumstances, and environmental conditions (McGinnis, Williams-Ruso, & Knickman, 2002). In recent years, health behaviors (e.g. tobacco use, poor diet, and physical inactivity) and social determinants (e.g. poverty, access to health care) have been singled out as contributing to health inequalities (Lewis & Burb-Sharps, 2010; Marmot, 2005). The effect of behavioral and social determinants of health outcomes is evident throughout the U.S and Nevada.

Health of the U.S. in the Global Community

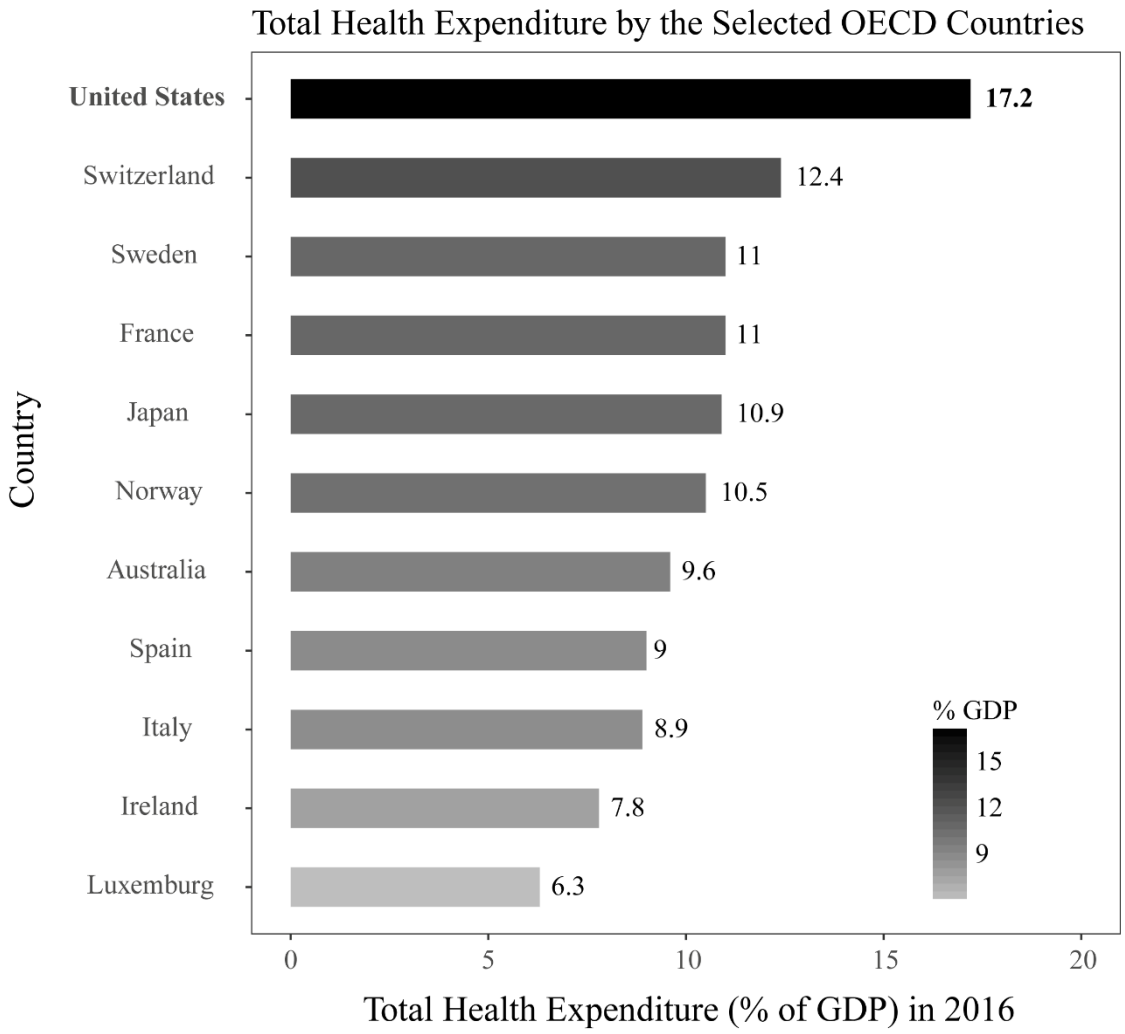
Before introducing to the health of Nevada, it is important to recognize where the U.S. stands in the global community in terms of health. The U.S. life expectancy at birth (78.8 years old) is appreciably lower than most of other OECD (Organization for the Economic Cooperation and Development) or economically developed countries (See Figure 1). Indeed, the U.S. is ranked 27th among the OECD nations in 2015. That is, given one of the major health indicators, the U.S. is behind other economically developed nations. At the same time, the U.S. health expenditure, which includes any health expenditure including the government, private sector (e.g., hospital, insurance) and individual out of pocket expense, is outstandingly higher than other nations. The U.S. health care costs 17.2% of the GDP (Gross Domestic Product) (see Figure 2). The country (Switzerland) with the second highest country (Switzerland) spends approximately 5% lower than the U.S. Other OECD nations with greater life expectancy consistently outperform the U.S. in the health expenditure. In short, the U.S. spends significantly greater amount of resources for its healthcare although the health outcome is suboptimal compared to other economically developed nations. In order to improve the health of the nation and reduce the health care cost, the U.S. needs to prevent leading causes of death and promote well-being of the population. The following sections review and summarize the relevant data for the communities in the State of Nevada.

Figure 1: Life Expectancy at Birth for the Top 10 OECD Counties and the U.S. 2015



Source: OECD (2017), Life expectancy at birth (indicator). doi: 10.1787/27e0fc9d-en (Accessed on 24 November 2017)

Figure 2: Total Health Expenditure by the Selected OECD Countries and the U.S.



Source: OECD (2017). Health Spending (Indicator). doi: OECD (2017), Health spending (indicator). doi: 10.1787/8643de7e-en (Accessed on 24 November 2017)

Nevada's Overall Health

Every year, the United Health Foundation and the American Public Health Association publish America's Health Rankings (AHR), a report that ranks states according to the number of health-related outcomes. An overall health measure based on national averages compares states on the factors like mortality rates, disease prevalence, health behaviors, public health policies, access to care, and economic and environmental risk. The following table shows overall health ranking for the top five and bottom five states in 2010 and 2016.

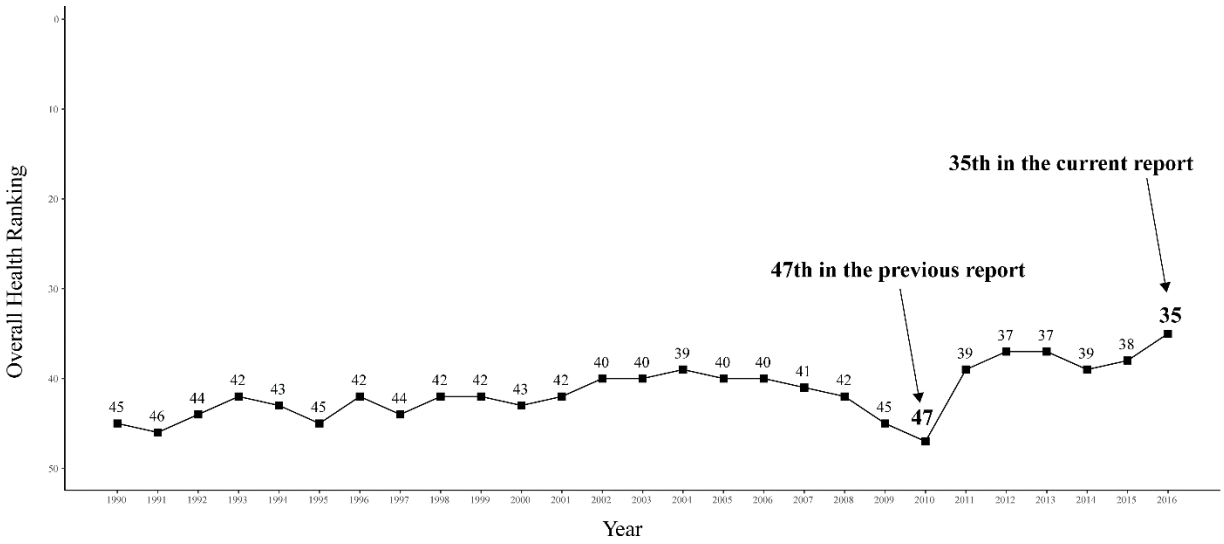
Table 1: Top and Bottom Five Ranked States in Overall Health, 2010 and 2016

Top Five Performing States 2010	**Top Five Performing States 2017**	**Bottom, Five Performing States 2010**	**Bottom Five Performing States 2017**
1. Vermont	1. Hawaii	50. Mississippi	50. Mississippi
2. Massachusetts	2. Massachusetts	49. Louisiana	49. Louisiana
3. New Hampshire	3. Connecticut	48. Arkansas	48. Arkansas
4. Connecticut	4. Minnesota	**47. Nevada**	47. Alabama
5. Hawaii	5. Vermont	46. Oklahoma	46. Oklahoma
			*
			35. Nevada

Source: United Health Foundation (2016). America's Health Rankings. Available at: https://assets.americashealthrankings.org/app/uploads/ahr16-complete-v2.pdf

In 2016, Nevada's overall health ranked 35th among all states in the U.S, a notable improvement from 47th place since this report was last published (AHR, 2016). Nevada's health has historically been among the lowest in the country. This has been largely attributed to the state's standing on the number of health determinants, including unimpressive high school graduation rates, deficient public health funding, substantial number of violent crimes, and low number of physicians per resident. According to the most recent report by AHR, in recent years there have been significant improvements in Nevadans' health. Figure 3 presents the state's overall health rank for years since 1990.

Figure 3: The Overall Health Rankings of Nevada between 1990 and 2016



Source: United Health Foundation. 2016. America's Health Rankings. Available at: https://www.americashealthrankings.org/explore/2016-annual-report/state/NV

Leading Causes of Death in Nevada

The table below illuminates the ten leading causes of death in Nevada in the year of 2015. The rates represent the number of deaths per 100,000 residents. Heart disease continues to be the leading cause of death in the U.S and Nevada, followed by cancer and chronic respiratory diseases (National Center for Health Statistics, 2015). These chronic conditions are responsible for a significant loss of life and financial cost to Nevadans. According to estimates, the top five leading causes of death account for as much as 61% of the total mortality and over $ 20.3 billion in direct and indirect healthcare cost (Morales, 2005). This section discusses the ten leading causes of death affecting Nevadans.

Table 2: The Top 10 Leading Causes of Death in Nevada, and the Age-Adjusted Rates per 100,000 populations in Nevada and the U.S., 2015

#	Causes of Death	**Nevada Rates**	**U.S. Rates**	Compared to the U.S. rates
1.	Heart disease	200.9	168.5	Higher
2.	Cancer	157.2	158.5	Lower
3.	Chronic lower respiratory disease	54.1	41.6	Higher
4.	Accidents	45.4	43.2	Higher
5.	Stroke	37.0	37.6	Lower
6.	Alzheimer's disease	32.9	29.4	Higher
7.	Flu/Pneumonia	21.3	15.2	Higher
8.	Suicide	18.4	13.3	Higher
9.	Chronic liver diseases/cirrhosis	14.5	10.8	Higher
10.	Diabetes	13.4	21.3	Lower

Source: National Center for Health Statistics, CDC. Available at: https://www.cdc.gov/nchs/pressroom/states/nevada/nevada.htm

Heart Disease

Heart disease, sometimes referred to as cardiovascular disease, are a series of disorders of the heart and blood vessels, such as high blood pressure, high cholesterol, coronary heart disease, and heart failure, among others (Mozaffarian, et al., 2014). As the leading chronic condition worldwide, cardiovascular disease contributes to the mortality, poor quality of life, disability, and increased health spending. The World Health Organization (WHO) estimates that in 2015, as many as 31% of all global deaths were due to cardiovascular disease (WHO, 2017). Cardiovascular disease is primarily caused by modifiable risk factors such as obesity, tobacco use, and physical inactivity (World Heart Federation, 2017).

Nevada is one of the states with the highest rates of cardiovascular deaths in the nation. Among all states, Nevada's cardiovascular mortality rate was the 7th highest, with an estimated 200.9 deaths from heart disease per 100,000 people – well above the national rate of 168.5 (AHR, 2016). Some of the risk factors for cardiovascular disease may explain these higher rates. For example, in 2015, the hypertension prevalence (28.3%) in Nevada was one of the worst (47th) among all states (Trust for America's Health, 2017). Indeed, about one in three Nevadans is affected by hypertension, heart disease, or stroke (Nevada Division of Public and Behavioral Health, 2017).

Importantly, cardiovascular conditions affect some Nevadans more than others (State Health Facts 2015; Trust for America's Health, 2017; United Health Foundation, 2016).

- The rates of heart disease deaths were higher among men (252.0 per 100,000 populations) than women (154.3).

- The percentage of men (6.3%) with heart disease was slightly higher than that of women (6.5%)

- The rates of heart disease deaths were higher among Blacks (253.0 per 100,000 populations) than Whites (206.0).

- Those with lower levels of education have higher rates of heart disease; while 4.1% Nevadans with a high school education or higher have heart disease, 6.7% with a high school education do.

- As many as 8.0% Nevadans with incomes of $25,000 or less have heart disease, while 3.3% of those with incomes over $50,000 do so.

Cancer

Cancer is the second leading cause of death in the U.S. and Nevada (AHR, 2016). Like cardiovascular disease and other chronic conditions, cancer contributes to the disability, poor quality of life, and financial burden on the healthcare system. The Agency for Healthcare Research and Quality estimates that cancer cost American taxpayers as much as $ 87.7 billion in 2014 (American Cancer Society, 2017). Modifiable lifestyle behaviors have a significant impact on cancer rates; it is estimated that tobacco use, inactivity, and poor diet contribute to approximately 33 % of cancer cases (American Cancer Society, 2017).

Nevada ranks 22nd out of all states in cancer deaths, this rank has been continuously improving since its all-time low of 44th place in 2003 (AHR,2016). The national mortality rates due to cancer have declined from 205.5 per 100,000 residents in 1996, to 189.1 in 2016. Despite this improvement, Nevada continues to be well above the national average of 149.3 deaths per 100,000 residents. There is a notable variability in death rates by type of cancer among Nevadans. Lung and bronchus cancer continue to be the leading causes of cancer-related deaths, followed by colon and rectum, breast, then pancreatic (Siegel, Miller & Jemal, 2017). The table below summarizes the number of cancer deaths in Nevada in comparison with national averages.

Table 3: The Estimated Death Rates (per 100,000) by Selected Type of Cancer in Nevada and the U.S., 2017

	Nevada		**U.S.**	
	Male	Female	Male	Female
All Type	469.9	397.1	512.1	418.5
Breast	-	113.9	-	123.3
Colorectal	50.7	35.1	469.	35.6
Lungs & Bronchus	67.9	58.6	75.0	53.5
Prostate	135.4	-	123.2	-

Source: Siegel, R., Miller, K. & Jemal, A. (2017). Cancer Statistics, 2017. AC: *Cancer Journal for*

Clinicians, 67(1), 7-30; http://onlinelibrary.wiley.com/doi/10.3322/caac.21387/full

In addition, there are marked socio-demographic disparities in cancer mortality within Nevada (AHR, 2016).

- Men experience higher rates of cancer mortality, with 219.8 deaths per 100,000 compared to 164.1 in 100,000 in women.

- Whites have higher rates of cancer deaths with 197.2 per 100,000 residents, followed by Blacks with 191.0, and Hispanics with 111.3.

- Although White women have higher rates of breast cancer, the risk of mortality is 44% higher in Black women.

Chronic Lower Respiratory Disease

Chronic lower respiratory disease (CLRD) is the third leading cause of death in the U.S and Nevada. CLRD refers to four overlapping common lung conditions: chronic obstructive pulmonary disease, chronic bronchitis, emphysema, and asthma (Oelsner et al., 2017). These conditions are largely caused by exposure to irritants such as tobacco smoke and air pollution, including outdoor and home/work exposure (Oelsner et al., 2017). Nevada's dry weather, dust, and unstable temperatures are likely to contribute to the high rates of respiratory conditions. The estimated 8.1% of adults in Nevada had the Asthma in 2014 (CDC, 2017). In addition, an estimated 10.1% of children in Nevada have asthma (Moonie & Lucas, 2016).

Diabetes

Diabetes is the seventh leading cause of death in the U.S. and tenth in the state of Nevada (American Diabetes Association, 2017). Diabetes is associated with a high risk of heart disease, stroke, limb amputation, kidney disease, blindness, and death (American Diabetes Association, 2017). Diabetes is a costly disease, with estimates suggesting that it costs Nevadans approximately $ 2.4 billion each year (American Diabetes Association, 2016). This cost includes medical expenses and other indirect costs due to loss of productivity. Like other leading health conditions, type 2 diabetes, the most common type, is linked to smoking, obesity, and poor diet. Consequently, modifiable health behaviors have the potential to reduce the incidence of this condition.

Nevada currently ranks 21st out of all states in diabetes prevalence, an increase from 16th place when this report was last updated (AHR, 2016). In 2016, 9.7 percent of adults in Nevada reported being told they had diabetes by a healthcare professional. According to a recent report by the American Diabetes Association, this percentage is likely to exceed 12.4 % when accounting for underreporting. That means that as many as 281,355 Nevadans have diabetes; this number increases to 787,000, or 38.5 % when prediabetes is considered. Hoping to reduce the rates of diabetes in Nevada, the National Institutes of Health and the Center for Disease Control have recently invested in diabetes research and diabetes prevention programs in the state (American Diabetes Association, 2017).

Sexually Transmitted Diseases

Sexually Transmitted Diseases (STDs) remain a major health concern in Nevada. Untreated STDs are associated with conditions such as pelvic inflammation, infertility, and cancer, in addition to contributing to the spread of HIV (Centers for Disease Control, 2016; Office of Public Health Informatics and Epidemiology, 2016).

- In 2016, there were an estimated 424.4 cases of chlamydia per 100, 000 residents of the state. This makes Nevada the 23rd state in the country in cases of chlamydia.

- In 2016, the rate of gonorrhea cases in Nevada was 151.0 per 100,000 residents. Blacks accounted for 24.5 % of cases, followed by Whites (20.9%), and Hispanics (13.9%).

- The rate of syphilis was 15.2 per 100,000 Nevadans. With a higher number of cases in Whites (32.4%), followed by Hispanics (31.3%), and Blacks (26.8%).

Risk Behaviors and other Determinants of Health

Despite recent improvements in overall health outcome indicators, Nevada continues to lag as one of the states with the poorest rankings on several key health determinants. According to the AHR 2016 report, the discrepancy between health determinants rank (40th) and current health outcomes rank (35th), suggest that Nevadans' health may experience a decline in the near future (AHR, 2016). Risk behaviors and structural determinants refer to an individual, as well as community-level preventable contributors to disease and mortality. A better understanding of these determinants and sustained action to minimize them can have a significant improvement in Nevada's health. The following section discusses some of the leading risk behaviors and socioeconomic determinants of health.

Violence and Crime

In 2016, Nevada ranked 49th among all states in violent crimes with an estimated 696 murders, rapes, robberies, and aggravated assaults per 100,000 residents (AHR, 2016). The rate is well above the national average of 383 crimes per 100,000 residents. This makes Nevada the second most violent state, trailing only Alaska with over 700 offenses per 100,000 population.

Violent crimes can affect overall population health directly and indirectly (McCollister, French, & Fang, 2010). For instance, violent crimes may cause injury, disability, premature death, and long-term stress for individuals and communities (Curry, Latkin, & Davey-Rothwell, 2008). In addition, violent crimes can limit healthy lifestyles by discouraging outdoor physical activity (Curry et al., 2008; Gomez, Johnson, & Selva, 2004). Finally, a chronic exposure to violence and crime is associated with chronic conditions such as heart disease, diabetes, and chronic obstructive pulmonary disease (Gomez et al., (2004).

Obesity

Obesity, defined as a Body Mass Index (BMI) of 30 or higher, is among the leading preventable causes of disease (Finkelstein, Trogdon, Cohen, & Dietz, 2009). Obesity is associated with common chronic conditions such as heart disease, type-2 diabetes, and certain types of cancers (Finkelstein et al, 2009). In addition to contributing to these leading causes of death, obesity is a costly condition. Among U.S. adults, the estimated nationwide cost of obesity is $ 147 billion every year (Finkelstein et al, 2009; U.S. Department of Health and Human Services, 2013).

According to estimates, 26.7% of Nevadan adults are obese; this makes the state 15th in obesity rates (AHR, 2016). Despite ranking 15th, Nevada's obesity rate has increased on average 1.43% faster than other states. Healthy dietary and physical activity practices reduce obesity and associated conditions. However, estimates suggest among Nevadan adults, less than 35.6 % report daily fruit and vegetable consumption (National Center for Chronic Disease Prevention and Health Promotion, 2016). In addition, only about 53% complete the suggested 150 minutes of weekly minutes of exercise; this places Nevada as 18th among all states in physical inactivity. Obesity affects certain groups more than others (AHR, 2016). For instance:

- Approximately 27% of males in Nevada are obese, compared to 25% of women.
- Nevadans aged 45-65 have higher rates of obesity with 33%.
- Those with less than a high school education have rates of 35%, while those with a college education have a rate of 21%.
- Finally, Hispanics have the highest rates (35%), followed by Blacks (26%), then Whites (25%).

Tobacco Use

Along with obesity, tobacco consumption is among the leading causes of preventable deaths in the country (Rostron, Chang, Pechacek, 2014). Smoking is associated with heart disease, respiratory disease, stroke, cancer, and premature death (Roston et al., 2014). It is estimated that those who smoke lose, on average, ten years of life compared to non-smokers (Jha & Ramasundarahettige, 2013). Furthermore, secondhand smoke affects those around smokers, increasing the chances of respiratory conditions in children and heart disease and lung cancer in adults.

Nevada currently ranks 25th among all states in percent of adult tobacco users (AHR, 2016). This is a significant improvement from 41st when this report was last released. Between 2012-2016, Nevada experienced the decrease in the smoking rate by 3.44% a year on average (AHR, 2016). Despite these hopeful trends, an estimated 17.5% of Nevadan adults still report smoking on a regular basis; this is comparable with the national average. There are notable differences in smoking rates by different populations (AHR, 2016). For example:

- A larger percentage (20.5%) of men smoke than women (14.6%)

- Smoking is higher in those between the ages of 18 and 44 (20.9%) than it is in 45-64
  (15.8%) and over age 65 (12.3).

- Finally, Blacks have the highest rate of smoking (27.4%), followed by Asians (18.4%), Whites (17.5%), and Hispanics (14.3%)

Substance Abuse

Substance abuse is associated with significant health and social problems at the individual, community, and societal level (Lowinson, Ruiz, & Millman, 2015). Alcohol and drug use contribute to crime, violence, accidental deaths, the spread of sexually transmitted diseases, higher rates of teen pregnancy, low worker productivity, homelessness, and increased health-care costs (Lowinson et al., 2015). Substance abuse continues to be a concern for Nevadans' health; the Silver State ranks 43rd in the number of drug deaths, with an estimated 21 drug-related deaths per 100,000 residents (AHR, 2016). This makes Nevada one of the states with the highest number of drug deaths per capita. Furthermore, an estimated 15.8 % of Nevadan adults report excessive drinking (four or more drinks); this is below the national average of 17.7%. Finally, drug deaths affect some Nevadans more than others:

- Drug deaths are higher in men (23.3) than in women (18.5). Furthermore, Whites have the highest rate (23.3), followed by American Indians (21.7), Blacks (18.0), and Hispanics (7.8)

- Excessive drinking in more common in men (21.4%) than women (19.3%). Whites have the highest excessive drinking rates (17.0%), followed by Hispanics (15.0%), Asians (13.2%), and Blacks (12.4%).

Public Health Spending

Public health spending refers to the dollar amount dedicated to programs designed to improve public health by the Centers for Disease Control and Prevention, Health Resources Services Administration, and the state. This funding allows states to improve communities' health by implementing health promotion programs. Higher spending on these programs is linked to a decrease in mortality from preventable conditions such as cardiovascular disease, diabetes, stroke, and cancer (Maya, 2011).

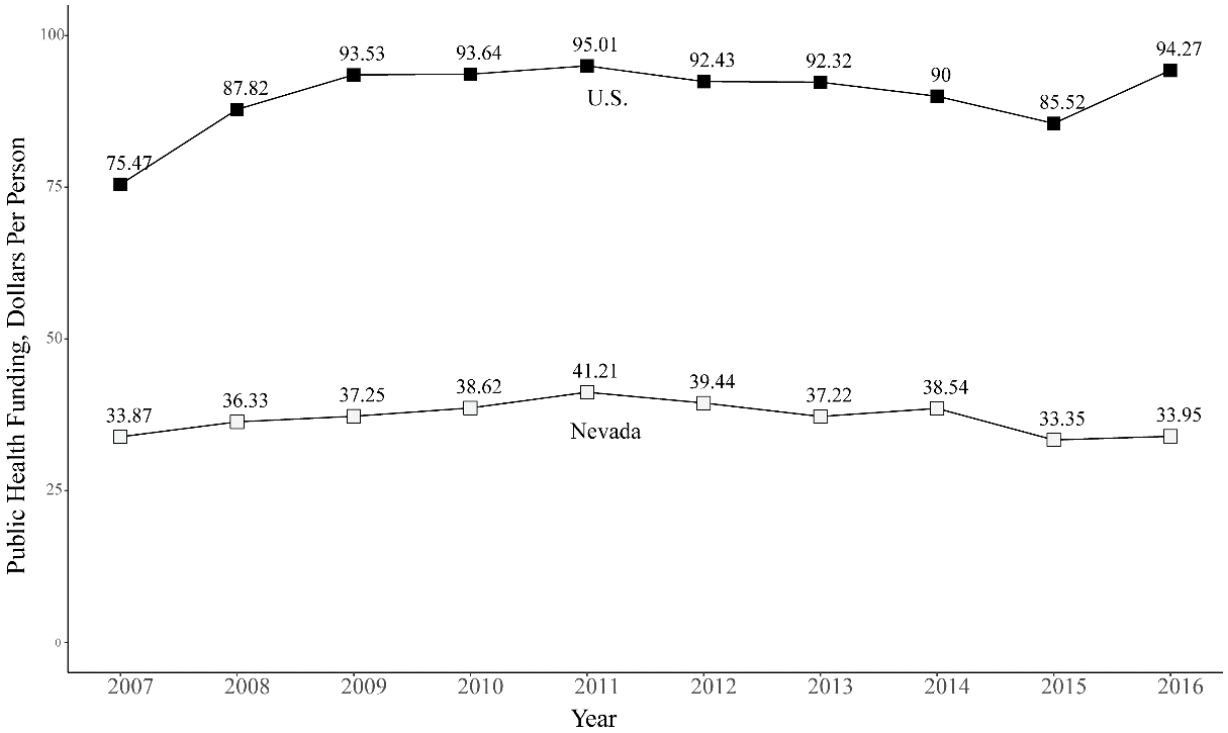
Nevada ranks 50th among all states in public health funding, this makes the state the lowest in public health funding with an approximate $34 per person, compared to the national average of $94 per person (AHR, 2016). Table 4 shows public health spending in the top and bottom five states. In addition, Figure 4 compares public health funding between the State of Nevada and the U.S. for years between 2007 and 2016. The public health spending in Nevada has been consistently lower than the national average.

Table 4: Top and Bottom Five Ranked States in Dollar-per-Person Public Health Spending in 2016.

Top Five States	Amount Spent per Person	Bottom Five States	Amount Spent per Person
1.Alaska	$261	***50. Nevada**	$34
2.Hawaii	$220	49. Indiana	$41
3.West Virginia	$205	48. Arizona	$42
4.New York	$154	47. Wisconsin	$43
5.Idaho	$142	46. Missouri	$45
U.S Average	**$94**		

Source: United Health Foundation (2016). America's Health Rankings. Available at: https://assets.americashealthrankings.org/app/uploads/ahr16-complete-v2.pdf

Figure 4: Comparisons of the Public Health Funding ($) per Person between the State of Nevada and U.S., 2007 - 2016.



Source: United Health Foundation. 2016. America's Health Rankings. Available at: https://www.americashealthrankings.org/explore/2016-annual

Health Provider Access

Access to a healthcare provider is perhaps one of the best indicators of a community's health. The number of primary care physicians in a community is a good measure of health care availability. A greater number of health care providers is associated with better health outcomes, including lower rates disease and longer life expectancy (Starfield, 2005). Nevada belongs to the bottom five states in the number of primary care physicians (AHR, 2016). The table below lists the top and bottom five states in the number of healthcare providers.

Table 5: Top and Bottom Five Ranked States in the Number of Primary Care Physicians per 100,000 residents, 2016

Top Five States	Primary Care Physicians per 100,000 residents	Bottom Five States	Primary Care Physicians per 100,000 residents
1. Rhode Island	247.7	50. Idaho	93.7
2. Massachusetts	227.7	49. Utah	96.7
3. New York	206.2	48. Mississippi	102.3
4. Connecticut	197.9	47. Wyoming	103.7
5. Pennsylvania	192.9	**46. Nevada**	**104.3**
U.S Average	**145.3**		

Source: United Health Foundation. 2016. America's Health Rankings. Available at: https://www.americashealthrankings.org/explore/2016-annual

Education

Higher educational attainment is consistently related to better health outcomes (Olshansky, Antonucci, Berkman, 2012). Individuals with higher levels of education are more likely to engage in health-promoting behaviors such as physical activity, healthy diet, and avoiding smoking (Olshansky et al., 2012).

Major health risk factors like the high blood pressure, diabetes, and obesity are more common among those with lower educational attainment (Olshansky et al., 2012). In recent years, the growing health disparities resulting from differences in education level have been the center of attention.

Despite a fair improvement in the last decades, Nevada has the second lowest high school graduation rate in the country (AHR, 2016). Table 6 shows the top and bottom five states by the high school graduation rates. In addition to a remarkably low graduation rate, there are significant social disparities in Nevada: Blacks have the lowest graduation rate in the state (55.5%), followed by American Indian (58.0%), Hispanics (66.7%), Whites (78.0%), and Asians (82.0%) (AHR, 2016).

Table 6: Top and Bottom Five Ranked States in Percent of High School Students Who Graduate within Four Years, in 2016.

Top Five States	Percent of High School Graduates	Bottom Five States	Percent of High School Graduates
1. Idaho	90.8	50. New Mexico	68.6
2. New Jersey	89.7	***49. Nevada**	**71.3**
3. Alabama	89.3	48. Oregon	73.8
4. Texas	89.0	47. Mississippi	75.4
5. Nebraska	88.9	46. Alaska	75.6
U.S. Average	**83.2**		

Source: United Health Foundation. 2016. America's Health Rankings. Available at: https://www.americashealthrankings.org/explore/2016-annual

Health across Nevada Counties

Just like there is the difference in health prevalence between states, there is variability across counties within the State of Nevada. In the following section, we use data from the Robert Wood Johnson Foundation County Health Rankings Project to present the variation between Nevada counties when it comes to overall health outcomes, risk behaviors, and health determinants. We present overall health rankings by county first, then discuss factors contributing to these differences. In this section, we intend to highlight the importance of community conditions (e.g., economic stability, education, employment, crime, pollution exposure) for the health of its residents.

Health Outcomes

The County Health Rankings (CHR) places counties in each of the 50 states according to their standing on the number of health outcomes. Overall health outcomes rankings are determined by a composite score reflecting the length and reported quality of life. Length of life refers to premature deaths (number of deaths before age 75), while the quality of life is determined by the percentage of adults reporting poor physical health and number of days sick per year. Below we discuss top and bottom ranking counties in the state (see Figure 5).

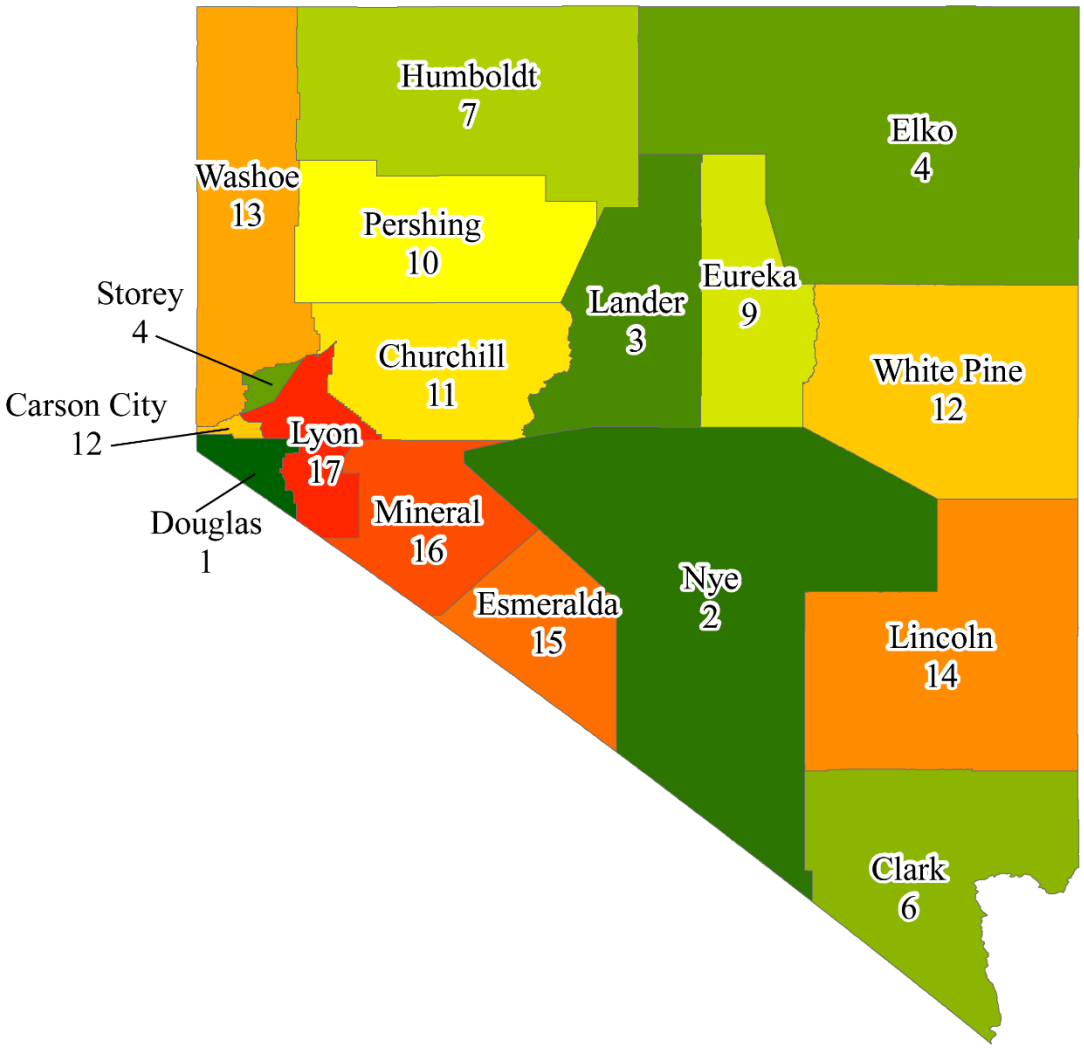
- In terms of overall health outcomes – considering both mortality and quality of life – Lincoln County is first with low mortality rate of an estimated 6,800 years of life lost in a year (higher than the U.S. average of 6,600 in the same year), approximately 14% of adults reporting poor or fair physical health, and an average of 3.7 sick days a year per person.

- On the other hand, Mineral County is last in overall health outcomes with

approximately 12,000 years of lost productivity due to premature death, 19% of adults reporting poor or fair physical health, and an average of 4.7 sick days a year per person.

- When accounting for individual indicators of health outcomes, Perishing County has the lowest mortality with an estimated 5,300 years of life lost in a year. Finally, Storey has the lowest percentage of residents reporting poor or fair physical health (12%) and number of sick days per year (3.4 days)

Figure 5: Counties in Nevada and the Ranks in Overall Health Outcomes

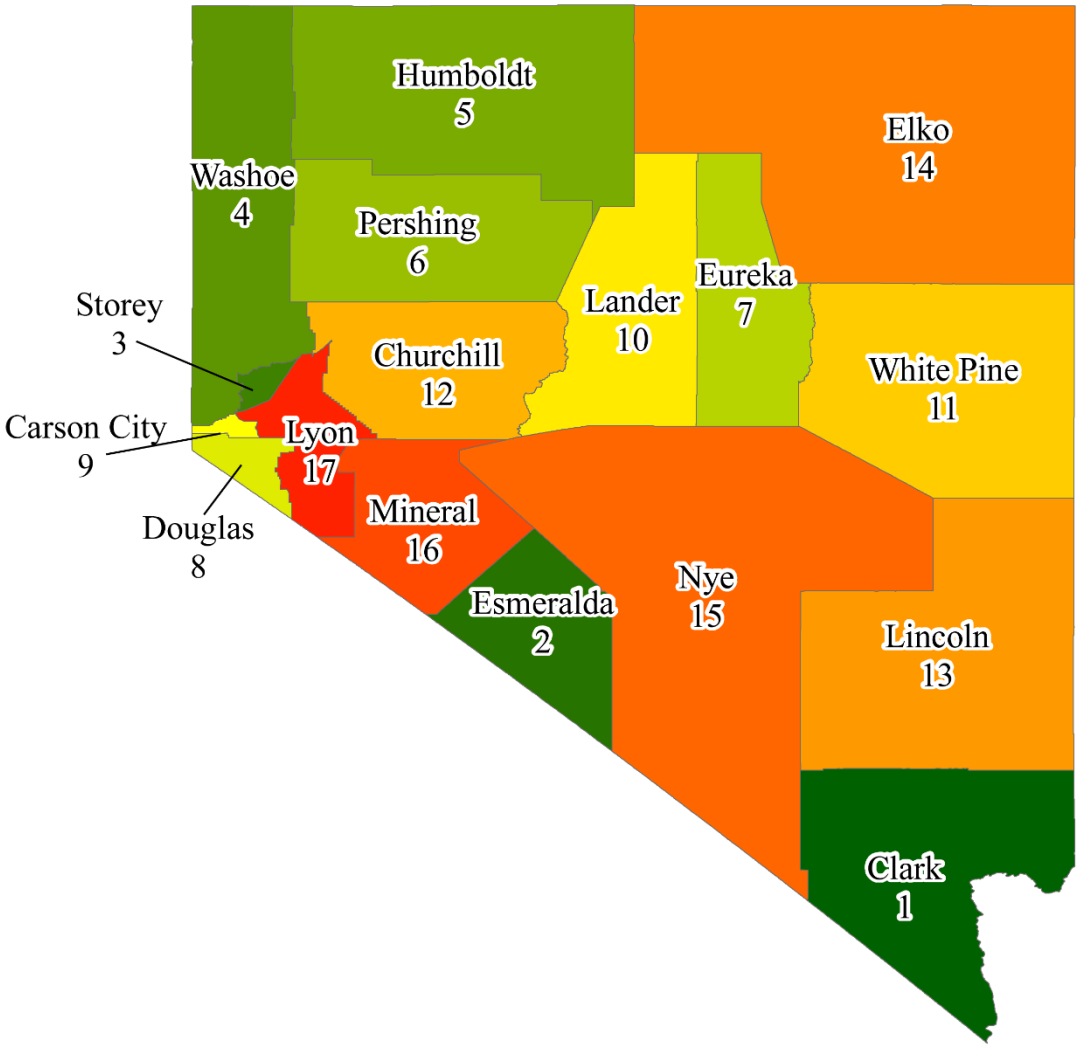


Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org
Note: The colors represent: Green (Higher ranks) – Yellow (Middle) – Red (Lower ranks)

Health Factors

A community's economic, social, and political infrastructure can serve to limit or promote opportunities for healthy behaviors and an improved quality of life. Consequently, these factors are important contributors of health disparities and warrant close attention. The County Health Rankings report ranks counties based on a health factors summary score that includes health behaviors, access to clinical care, socio-economic factors, and the physical environment (CHR, 2017). Figure 6 shows rankings in the year 2017.

Figure 6: Counties in Nevada and their Rank of Health Factors



Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org
Note: The colors represent: Green (Higher ranks) – Yellow (Middle) – Red (Lower ranks)

Health Behaviors

Health behaviors include the percentage of adult smokers, percentage of adults who are obese, percent of physically inactive adults, and percent of adults reporting excessive drinking, among other indicators of health behaviors.

Table 7: The Ranks of the Health Behaviors by Counties in Nevada for 2011 and 2017

County	2017 Rank	2011 Rank
Douglas	**1**	1
Storey	**2**	4
Cason City	**3**	5
Washoe	4	3
Eureka	5	*NA*
Lincoln	6	2
Lander	7	6
Clark	8	8
Humboldt	9	13
Churchill	10	7
White Pine	11	9
Esmeralda	12	*NA*
Elko	13	10
Lyon	14	12
Nye	**15**	11
Mineral	**16**	15
Pershing	**17**	14

Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org
Douglass, Storey, and Carson City are the top three counties for health behaviors**,** while Nye, Mineral, and Pershing are the bottom three counties.

Clinical Care

- Clinical care refers to access to health care providers and quality of health care.

- The top three counties for clinical care are Douglass, Washoe, and Carson City. While the bottom three counties are Nye, Mineral, and Esmeralda.

Table 8: The Ranks of the Clinical Care by Counties in Nevada for 2011 and 2017

	2017 Rank	2011 Rank
Douglass	**1**	1
Washoe	**2**	2
Carson City	**3**	6
White Pine	4	12
Storey	5	5
Eureka	6	NA
Clark	7	8
Lyon	8	10
Pershing	9	15
Lander	10	4
Churchill	11	7
Lincoln	12	14
Humboldt	13	9
Elko	14	13
Nye	**15**	11
Mineral	**16**	3
Esmeralda	**17**	NA

Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org

Social and Economic Factors

- Social and economic factors include employment rate, educational attainment, income, and perceptions of support.

- The top three counties are Elko, Douglass, and Humboldt, while Lyon, Nye, and Mineral are bottom three counties.

Table 9: The Ranks of the Social and Economic Factors by Counties in Nevada for 2011 and 2017

	2017 Rank	2011 Rank
Elko	**1**	2
Douglass	**2**	3
Humboldt	**3**	5
Lincoln	4	6
Lander	5	7
Washoe	6	9
Eureka	7	NA
Storey	8	1
White Pine	9	8
Esmeralda	10	NA
Churchill	11	4
Clark	12	12
Carson City	13	10
Pershing	14	13
Lyon	15	11
Nye	16	14
Mineral	17	15

Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org

Physical Environment

- Finally, the physical environment indicator considers access to recreational facilities and healthy food outlets.

- The top three counties include Lander, White Pine, and Eureka, while the bottom three are Lyon, Washoe, and Clark counties

Table 10: The Ranks of the Physical Environment by Counties in Nevada for 2011 and 2017

	2017 Rank	2011 Rank
Lander	**1**	12
White Pine	**2**	9
Eureka	**3**	NA
Mineral	4	12
Esmeralda	5	NA
Pershing	6	4
Elko	7	10
Lincoln	8	6
Humboldt	9	7
Carson City	10	1
Churchill	11	2
Nye	12	7
Storey	13	11
Douglass	14	5
Lyon	15	3
Washoe	16	14
Clark	17	15

Source: Robert Wood Johnson Foundation. 2017. County Health Ranking. Available at: http://www.countyhealthrankings.org

Selected Suggestions to Improve Nevada's Health

This report highlighted selected health outcomes and health determinants in the State of Nevada. As can be seen, there are notable promoters and risk factors to health outcomes. Therefore, focusing on any specific determinant is an unrealistic strategy to improve the health of Nevadans. It is critical to identify the factors that influence multiple health determinants. In this respect, initiatives to improving social determinants of health should be the focus in Nevada's communities. For example, investing in the public education as well as healthcare access would most likely result in the improvement of health behaviors (e.g., smoking, diet, physical activities, utilization of preventive health care) (Braveman, Egerter & Williams, 2011).

To promote the Nevada's health, we highlight the selected recommendations from the Surgeon General's report (Advisory Group on Prevention, Health Promotion, and Integrative and Public Health, 2016) and the national health goals (Healthy People 2020) set by the U.S. Department of Health and Human Services.

1. **Simultaneously address the multiple health determinants.** This report focuses on selected health determinants but there are much more. As such, biological, social, economic and environmental factors and their interrelationships should receive more attention to improve the population health.

2. **Take the life course approach to health promotion and maintenance.** Health outcomes are the product of short term and long-term exposures to the health-promoting and risk factors. Indeed, specific health risk factors significantly vary across the life stages. One size does not fit all. For examples, there should be the health promotion and disease prevention strategies unique to children and older adults.

3. **Pay more attention to the key public health determinants.** As the Surgeon General's report shows, the key public health risk factors including tobacco use and obesity should be the priorities at the individual-, community-, and policy levels.

4. **Improve the health care access.** Preventive health care service, as well as medical services, are critical to maintaining health. Particularly, subpopulations at the greater risk of health problems – children and older adults – should have adequate health care access (e.g., health insurance, transportation). Also, training future health care professionals is an urgent task not only in Nevada but also as a nation. On a related note, policy level actions are indispensable to make an significant impact on health care access (see Appendix 2 for some examples of the recent public health-related legislative actions).

5. **Get the communities involved.** Changing the health of the state or nation takes a tremendous amount of time and resource. Community-level efforts to enhance the active and healthy lifestyle are indispensable.

6. **Do not forget the infectious diseases.** Since the development of antibiotics and antivirus, many people believe that the infectious diseases are no longer a public health concern as they are curable. However, there has been the reemergence of infectious diseases, and several outbreaks (e.g., Ebola and Zika) in the recent years. Additionally, antibiotic-resistant bacteria and sexually transmitted infections are now serious threats to the public. Prevention is the key.

7. **Develop a safe living environment.** For the younger populations, the leading cause of death is the unintentional injuries. Promoting the traffic safety and preventing the violent crimes certainly contribute to the healthier living environments.

Conclusion

The U.S. spends more resource on health care than any other economically developed nations but the health outcome of the population is relatively poor in the global community. This report focused on the State of Nevada to provide key health information to improve the health of this state, and in turn, to contribute to the nation's health. Within the U.S., the health rank of Nevada moved up to 35th from 47th since the previous report (Monnat, 2012). However, in terms of the leading causes of death including heart disease, accident, flu/pneumonia, suicide and liver diseases, the rates of Nevada are appreciably higher than the U.S. rates. Also, the public health spending per capita in Nevada is one of the lowest in the nation. Moreover, given the suboptimal ratios of primary care physicians per 100,000 residents in Nevada, training future health care professionals is urgently needed. Finally, within the State of Nevada, there are tremendous variations in the health outcomes and determinants across counties. Such disproportionate geographic distributions (i.e., health inequalities by counties) are of public health concerns as a state. It is our hope that the data presented in this report and our selected suggestions will help promote the discussions about how to improve the health of Nevadans.

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Appendix 1: Selected National, State (Nevada) and Community Resources

For more information about disease, behavioral risk and social determinants of health, visit the following websites:

National

American Cancer Society: http://www.cancer.org/
American Diabetes Association: http://www.diabetes.org/
American Lung Association: http://www.lungusa.org/
American Public Health Association: http://www.apha.org/
Centers for Disease Control and Prevention: http://www.cdc.gov/
CiudadoDeSalud.gov: http://www.cuidadodesalud.gov/enes/
Healthy People 2020: http://www.healthypeople.gov/2020/default.aspx
Heart Disease Health Center: http://www.webmd.com/heart-disease/default.htm
Men's Health Information: http://health.nih.gov/category/MensHealth
National Institutes of Health: http://www.nih.gov/
National Women's Health Resource Center: http://www.healthywomen.org/
OECD Data: https://data.oecd.org/
Robert Wood Johnson Foundation: http://www.rwjf.org/
Smoking Cessation: http://www.smokefree.gov/
University of Wisconsin Population Health Institute: http://uwphi.pophealth.wisc.edu/
U.S. Department of Health and Human Services: http://www.hhs.gov/

State (Nevada) & Community

County Health Rankings: http://www.countyhealthrankings.org/
Lou Ruvo Center for Brain Health, Cleveland Clinic: Nevada Cancer Institute:
http://www.nevadacancerinstitute.org/education.aspx?id=358
Nevada Department of Health and Human Services: http://dhhs.nv.gov/
https://my.clevelandclinic.org/departments/neurological/depts/brain-health
Nevada Journal of Public Health: https://npha.wildapricot.org/page-18065
Nevada Public Health Association: https://npha.wildapricot.org/
Southern Nevada Health District: http://www.cchd.org/
University of Nevada, Las Vegas, School of Community Health Sciences:
https://www.unlv.edu/publichealth
University of Nevada, Las Vegas, School of Medicine: https://www.unlv.edu/medicine
University of Nevada, Reno, School of Community Health Sciences:
https://www.unr.edu/public-health
University of Nevada, Reno, School of Medicine: https://med.unr.edu/

Appendix 2: Recent Public Health-related Legislative Actions in Nevada

- In June of 2017, the Resident Physician Shortage Reduction Act was proposed to increase the number of physicians in the Silver State. The act would encourage Nevada's medical school graduates to remain in the state by increasing the number of work opportunities in Nevada's hospitals. Similarly, the Advancing Medical Resident Training in Community Hospitals Act was also proposed to improve health care access across Nevada's rural communities.

- Signed into law May 2015, the HIV Targeted Outreach and Testing Bill (AB 243) eliminated state restrictions for HIV testing to be solely administered by licensed physicians or medical laboratory assistants in a medical setting. The enactment of this new law facilitates Nevadans' access to community-based HIV testing.

- In June of 2017, Governor Sandoval vetoed a bill that would have established a health care plan to cover Nevadans not eligible for Medicaid. Assembly Bill 374 would have required the Department of Health and Human Services to provide options for those ineligible to Medicaid to purchase low-cost health plans from the Silver State Health Insurance Exchange.

- In November 2015, the House bill Community Health and Medical Professionals Improve Our Nation Act of 2017 (H.R. 3922) was approved. This bill extends funding for community health centers, however, funds would be appropriated by making cuts to the Prevention and Public Health Fund, the nation's only dedicated investment in prevention and public health programs.