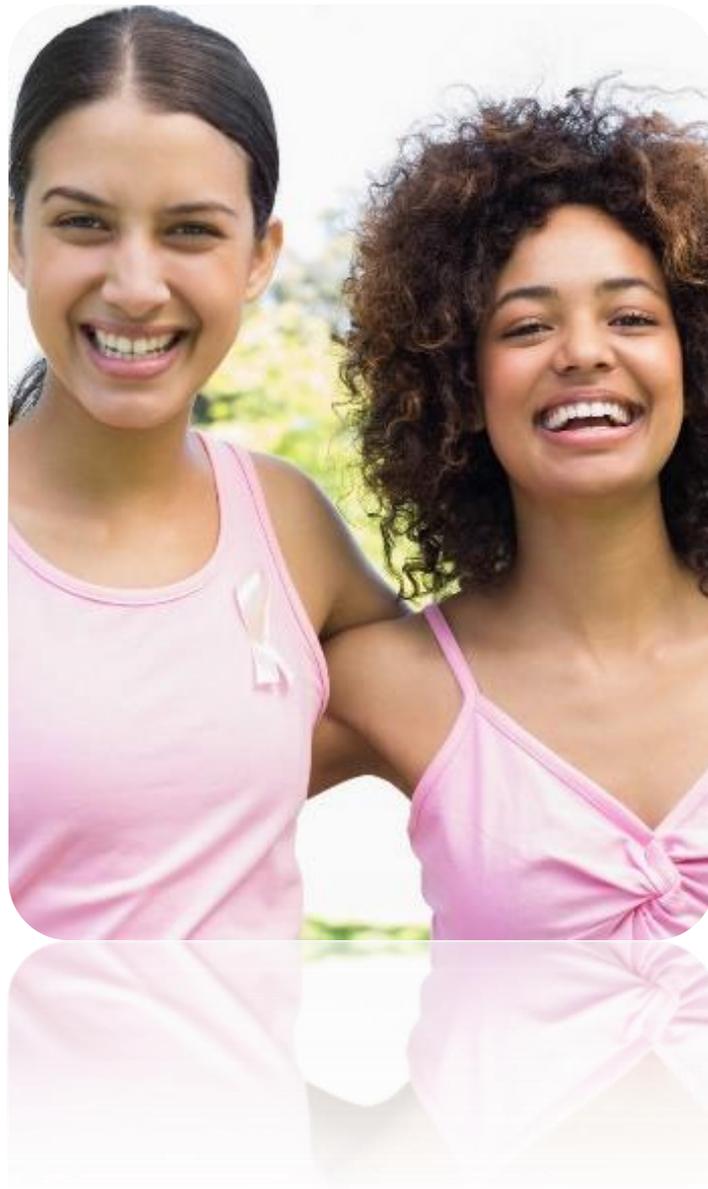


# NEVADA BREAST AND CERVICAL CANCER

## BURDEN REPORT

2017





**Get screened! Stay Healthy!**



Brian Sandoval, Governor

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## EXECUTIVE SUMMARY

Women's Health Connection (WHC), housed the Chronic Disease Prevention and Health Promotion (CDPHP) Section within the Nevada Division of Public and Behavioral Health (DPBH), Bureau of Child, Family and Community Wellness (BCFCW) is pleased to release Nevada's 2017 Breast and Cervical Cancer Screening Burden Document. WHC helps facilitate access to breast and cervical cancer screenings and diagnostic services to low-income, uninsured, and underserved women in Nevada.

In 2016, it is estimated over 2,000 new cases of breast cancer were diagnosed in Nevada and nearly 380 women died from the disease. Cervical cancer estimates indicate 104 women were diagnosed and thirty women died from the disease. An increase in timely, age-appropriate screening could prevent many of these deaths by detecting cancer early when it is most treatable.

Mammograms and Papanicolaou (Pap) tests are highly effective cancer screening tools but are underused by some subgroups of the population. A disproportionate number of deaths occur from breast and cervical cancer among uninsured and underinsured women.

Women in Nevada encounter barriers including rural or geographical remoteness, cultural isolation, and uninsured or underinsured and minority women. The goal of the WHC Program is to improve access to and utilization of screening services for the underserved population while improving the quality of care received by all women in Nevada.

This document includes activities, resources and data from the WHC program years 2010 to 2014. In this document, program components are outlined and clinical data and outcomes are reviewed. By presenting this report, WHC highlights the burden and importance of breast and cervical cancer screening in Nevada.

## INTRODUCTION

In 1990, Congress passed *The Breast and Cervical Cancer Mortality Prevention Act* due to an increase in the number of low-income and uninsured women being diagnosed with breast cancer. This bill authorized the Centers for Disease Control and Prevention (CDC) to establish the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) to provide high-quality and timely breast and cervical cancer screening and diagnostic services to low-income, and uninsured women. The bill created the first and only national cancer screening program in the United States. NBCCEDP funds 67 programs including all 50 states, the District of Columbia, five US territories, and eleven tribes or tribal organizations.<sup>1</sup>

The first years of funding from NBCCEDP were to develop the infrastructure necessary to deliver the screening program. In 1997, The Nevada Division of Public and Behavioral Health formerly known as Nevada State Health Division, received funding from NBCCEDP to conduct the Women's Health Connection (WHC) Program.<sup>1</sup> Since its implementation, WHC has been federally funded through NBCCEDP and has provided breast and cervical cancer screening services to over 58,471 women, provided 190,475 mammogram examinations and cervical cancer screening tests, and diagnosed more than 690 breast cancers, and 992 cervical cancer or premalignant cervical lesions, in Nevada.<sup>2</sup>

The objective of WHC is to reduce breast and cervical cancer morbidity and mortality rates of medically underserved women in Nevada. This is accomplished through education, screening, and diagnosis. As a result of the *Breast and Cervical Cancer Prevention and Treatment Act of 2000 (Public Law 106-354)*, women who are enrolled and active in Women's Health Connection program for breast and cervical cancer screenings and diagnosed with breast or cervical cancer may have access to treatment services through Medicaid.

Since 1991, all NBCCEDP national programs have served more than 5.2 million women, provided over 12.5 million mammogram examination and cervical cancer screening tests, diagnosed more than 56,931 breast cancers, 3,934 invasive cervical cancers and 167,748 abnormal pap tests.<sup>3</sup>

*"It is the mission of the Division of Public and Behavioral Health to protect, promote and improve the physical and behavioral health of the people of Nevada"*

## GEOGRAPHY AND DEMOGRAPHICS

In 2015, Nevada's population was 2,890,845, making it the 35th largest state by population. Nevada encompasses 110,540 square miles making it the seventh largest state by area. Nevada is roughly 483 miles long and 320 miles wide and consists of mostly mountainous and desert terrain.<sup>4</sup>



Altitudes in the state vary widely from 500 feet to over 13,000 feet. Approximately 68 percent of the state's land is owned by the U.S. Federal Government under both civilian and military jurisdictions. Of the 17 counties in Nevada, three are considered urban (Clark, Washoe, and Consolidated Municipality of Carson City), which accounts for 88 percent of the state's population. The remainder of the population is divided among Nevada's rural counties (Storey, Lyon, and Douglas) and frontier counties. Nevada's frontier and rural counties account for 10.7 percent of the state population, and 86.8 percent of the state land mass, illustrating one of the challenges in serving these residents. Nevada is unique when compared to many other states; there are many counties that have a population density of one person or less per square mile of land.<sup>5</sup>

Table 1: Nevada Counties' Demographic Data:

County	2010 Total Population	Area (sq. mi. of land and water)	Population Density per sq. mile of land
Carson City	55,274	157	382.1
Churchill	24,877	5,024	5.0
Clark	1,951,269	8,061	247.3
Douglas	46,997	738	66.2
Elko	48,818	17,203	2.8
Esmeralda	783	3,589	0.2
Eureka	1,987	4,180	0.5
Humboldt	16,528	9,658	1.7
Lander	5,775	5,519	1.1
Lincoln	5,345	10,637	0.5
Lyon	51,980	2,024	26.0
Mineral	4,772	3,813	1.3
Nye	43,946	18,199	2.4
Pershing	6,753	6,067	1.1
Storey	4,010	264	15.3
Washoe	421,407	6,542	66.9
White Pine	10,030	8,897	1.1

**Data Source:** U.S. Census Bureau: 2010 Census. Accessed at [https://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml).

Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

According to the U.S. Census Bureau, Nevada's 2016 population estimates increased 8.9 percent from 2010. Nevada's population in 2010 was 2,700,511 while 2016 population estimates are 2,940,058.<sup>6</sup>

## BREAST AND CERVICAL CANCER IN NEVADA

Preliminary data indicates between 2010 and 2014, approximately 2,100 women in Nevada were diagnosed with breast cancer each year, and 419 women died from the disease.<sup>7</sup> The survival rate for breast cancer has improved with **four** of every **five** diagnosed women now surviving the disease.



The mortality rate for breast cancer has declined over the past decade and can be partially attributed to earlier diagnosis due to improved screening and treatment.<sup>8</sup>

According to the American Cancer Society (ACS), cervical cancer was one of the most common causes of cancer deaths among American women. Over the last 30 years, this has decreased by 50 percent due to an increase in pap screenings. However, the incidence and mortality rates rank lower among other cancers for women in Nevada due to regular screenings. Despite this, 58.4 percent of cervical cancers are now diagnosed as late-stage cancer.<sup>9</sup>

Approximately 70 percent of all cervical cancers are caused by Human Papillomavirus (HPV) (types 16 and 18), which is the most common sexually transmitted infection (STI) in the United States. When the human body is compromised the virus becomes unchecked, altering cells which can lead to cancer.<sup>10</sup>

### **Women's Health Connection Program**

The Nevada Division of Public and Behavioral Health Chronic Disease Prevention and Health Promotion Section partners with Access to Healthcare Network (AHN) to administer the Women's Health Connection (WHC) program. WHC is a breast and cervical cancer early detection program dedicated to serving low-income, high-risk, uninsured/underinsured women living in Nevada.

The goal of WHC is to reduce the burden of breast and cervical cancer through education, early screening and diagnostics, care coordination/case management, and improved accessibility to treatment.

Currently there are three vaccines:

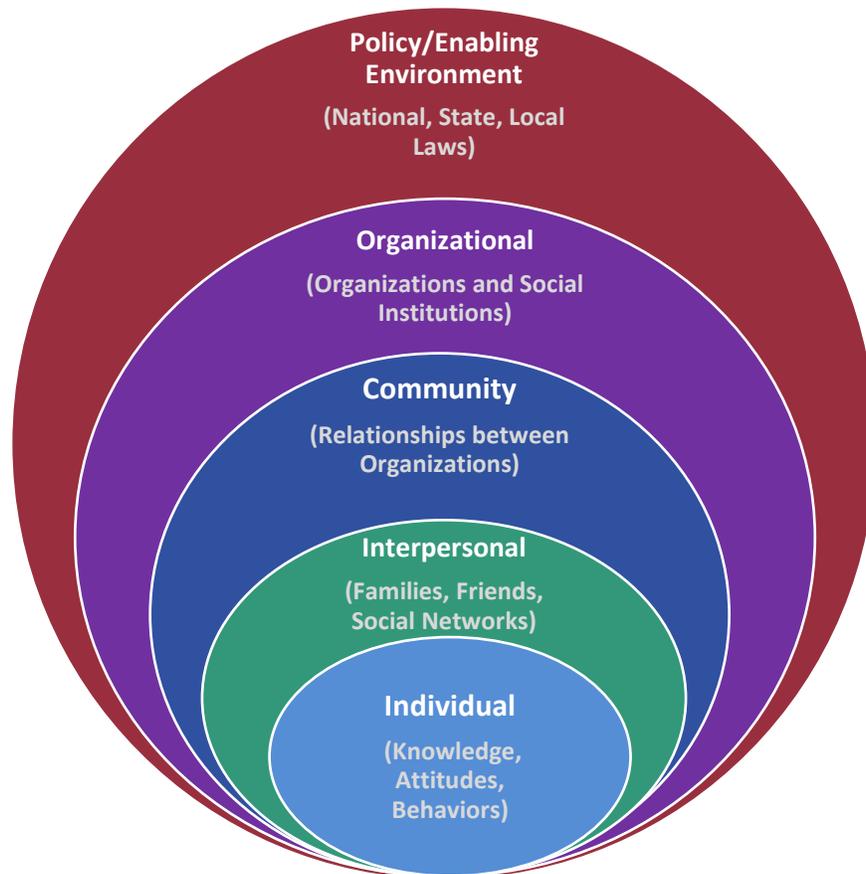
- Gardasil
- Gardasil-9
- Cervarix

approved by the U.S. Food and Drug Administration (FDA) to prevent HPV infection. While vaccines have been linked to lower incidences of cervical cancer, the lack of cervical cancer screening and doctors reporting to the registries make it difficult to monitor the full extent of HPV vaccine impact.<sup>11</sup>

The Centers for Disease Control and Prevention (CDC) has adapted the Social Ecological Model (SEM) for the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), which provides a foundation for moving from providing screening services only for NBCCEDP-eligible women, to both a screening provision and a population-based screening and systems change approach. To effectively reduce morbidity and mortality with breast and cervical cancer, screening tests must be coupled with population-based activities that embrace environmental, policy and system change approaches.

The SEM model is a systems approach with five nested hierarchical systematic levels. Figure 1 provides a brief description of each SEM level and the most effective approach to public health prevention and control, which use a combination of interventions at all levels of the model.<sup>12</sup>

Figure 1: National Breast and Cervical Cancer Early Detection Program (NBCCEDP)  
Social Ecological Model (SEM)



**Individual Level:** The innermost band represents the individual who might be affected by the NBCCEDP. The NBCCEDP aims to increase the individual’s knowledge and influence her attitudes toward, and beliefs regarding:

- The need for breast and cervical cancer screening,
- The intention to be screened,
- The risks and benefits of screening, and
- Access to affordable and convenient breast and cervical cancer screening, diagnosis, and treatment.

The NBCCEDP SEM highlights the importance of providing individuals with high-quality, appropriate breast and cervical cancer screening and surveillance and ensuring timely initiation of treatment for women who are diagnosed with cancer.

**Interpersonal Level:** The second band represents breast and cervical cancer prevention activities implemented at the interpersonal level. These activities are intended to facilitate individual behavior change by affecting social and cultural norms and overcoming individual-level barriers. Friends, family, health care providers, Community Health Workers or *promotoras*,

and patient navigators represent potential sources of interpersonal messages and support. The NBCCEDP SEM highlights several interventions appropriate for this level, including:

- Providers making screening recommendations to their patients,
- Patients receiving reminders about the need for screening, and
- Patient navigators helping to remove logistical and other barriers to screening.

**Organizational Level:** The third band represents breast and cervical cancer prevention activities implemented at the organization level. These activities are intended to facilitate individual behavior change by influencing organizational systems and policies. Health care systems, employers or worksites, health care plans, local health departments, tribal urban health clinics, and professional organizations represent potential sources of organizational messages and support. The NBCCEDP SEM highlights several interventions appropriate for this level, including:

- Promoting the use of client and provider reminder systems,
- Providing provider assessment and feedback on their performance,
- Encouraging the coverage and expansion of benefits for screening, and
- Adopting worksite policies that support preventive care.

**Community Level:** The fourth band represents breast and cervical cancer prevention activities implemented at the community level. These activities are intended to facilitate individual behavior change by leveraging resources and participation of community-level institutions such as comprehensive cancer control coalitions, tribal health departments, media, and community advocacy groups, which represent potential sources of community communication and support. The NBCCEDP SEM highlights several interventions appropriate for this level, including:

- Working with coalitions and collaborates to promote breast and cervical cancer screening and expand resources,
  - Conducting public awareness and educational campaigns, and
  - Collaborating with tribal health departments to expand breast and cervical cancer screening.
- **Policy-Enabling Environment:** The fifth and outermost band represents breast and cervical cancer prevention activities at the policy level. These activities involve interpreting and implementing existing policy. Federal, state, local, and tribal government agencies may support policies that promote healthy behavior, including screening. Examples include:
    - Collaborating with coalitions to communicate policy decisions to the public (for example, insurance mandates for screening), and

- Translating local policies for community members (for example, proclamation by a mayor for breast cancer awareness month).<sup>13</sup>



To effectively reduce illnesses and deaths associated with breast and cervical cancer, screening should be coupled with population-based activities that embrace policy, systems and environmental change approaches.<sup>14</sup>

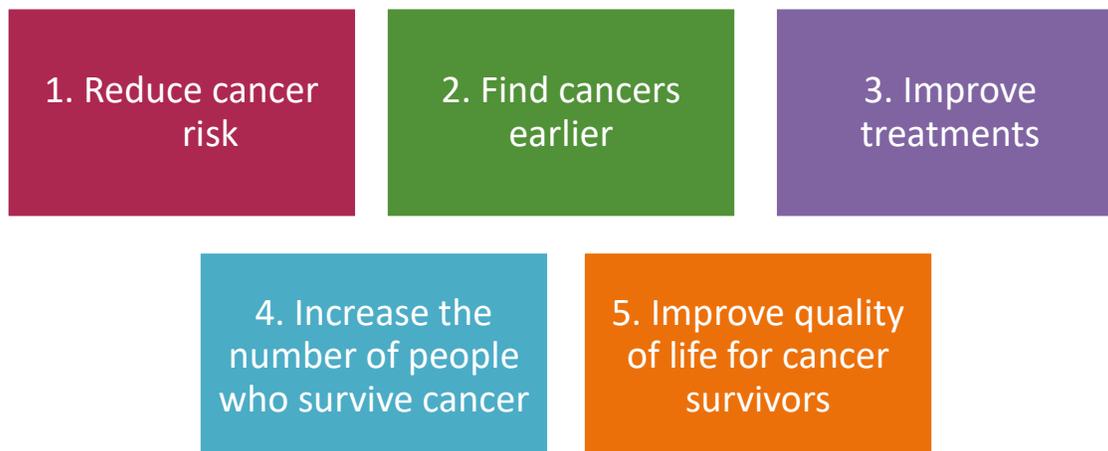
To improve health outcomes in breast and cervical cancer screenings, WHC, CDC and NBCCEDP rely on the United States Preventive Services Task Force (USPSTF) to determine screening guidelines. The USPSTF utilize Evidence-Based Interventions (EBI) for cancer screenings. EBI's are recommendations for intervention strategies to increase cancer screenings based on systematic reviews of available evidence. USPSTF recommends:

- Women 50-74 years of age receive mammography screening every 2 years.<sup>15</sup>
- Women 21-65 years are screened for cervical cancer with a Pap test every three years.<sup>16</sup>
- Women 30-65 who want to lengthen the screening interval are tested every five years.<sup>17</sup>

## COMPREHENSIVE CANCER CONTROL

The National Comprehensive Cancer Control Program (NCCCP) is a national process that aims to accomplish five goals, see Figure 2.

Figure 2: Comprehensive Cancer Control Goals



NCCCP addresses the need to deliver effective and targeted interventions across the female life span from childhood through adulthood. These interventions include community education, social mobilization, human papillomavirus (HPV) vaccination, screening, treatment, survivorship support and palliative care. NCCCP is based on complementary strategies for comprehensive breast and cervical cancer prevention and control and leverages collaboration across local and national health programs (particularly immunization, reproductive health, cancer control and adolescent health), organizations, and partners.

The Centers for Disease Control and Prevention (CDC) designed this process to create pooled resources by bringing communities and partner organizations together to reduce the burden of cancer. As part of the comprehensive cancer control process, the CDC created NCCCP to help facilitate the formation and sustainability of these efforts by supporting cancer coalitions across the nation. As cancer is found across diverse populations and has a vast number of causes, NCCCP includes activities and plans to:

- 1) Encourage people to live a healthy lifestyle,
- 2) Promote cancer screening test,
- 3) Increase access to quality cancer care, and
- 4) Improve the quality of life for people who survive cancer.

## NEVADA CENTRAL CANCER REGISTRY

The Nevada Central Cancer Registry (NCCR) is a vital tool for monitoring the incidence of cancer within the state and sharing that information with health care professionals, researchers, and general public. NCCR collects and maintains a record of reportable cases of cancer in the state.

The data are used to evaluate the appropriateness of measures for the prevention and control of cancer and to conduct comprehensive epidemiological surveys of cancer and cancer-related deaths. Cancer case data are collected from hospitals, medical laboratories, other freestanding facilities, and from physicians that provide screening, diagnostic or therapeutic services to patients with respect to cancer. The information on these cancer cases is reported to NCCR. This is accomplished by reporting facilities abstracting state-required patient cancer information from their medical records. Collected data are entered into a specialized database where additional case information is added, edited, and consolidated for accuracy and completeness. NCCR staff conduct follow-up activities with facilities and/or physicians and uses sources such as the Department of Motor Vehicles, hospital discharge, Social Security Death Index, voter registration, census tract, and death information from the State Office of Vital Records to assure case record completeness.



NCCR annually compiles comprehensive cancer data collected for all years of operation and submits a report to the Centers for Disease Control and Prevention (CDC)/National Program of Cancer Registries (NPCR) and the North American Association of Central Cancer Registries (NAACCR) for analysis, certifications, and inclusion in national cancer statistics.

## BREAST AND CERVICAL CANCER

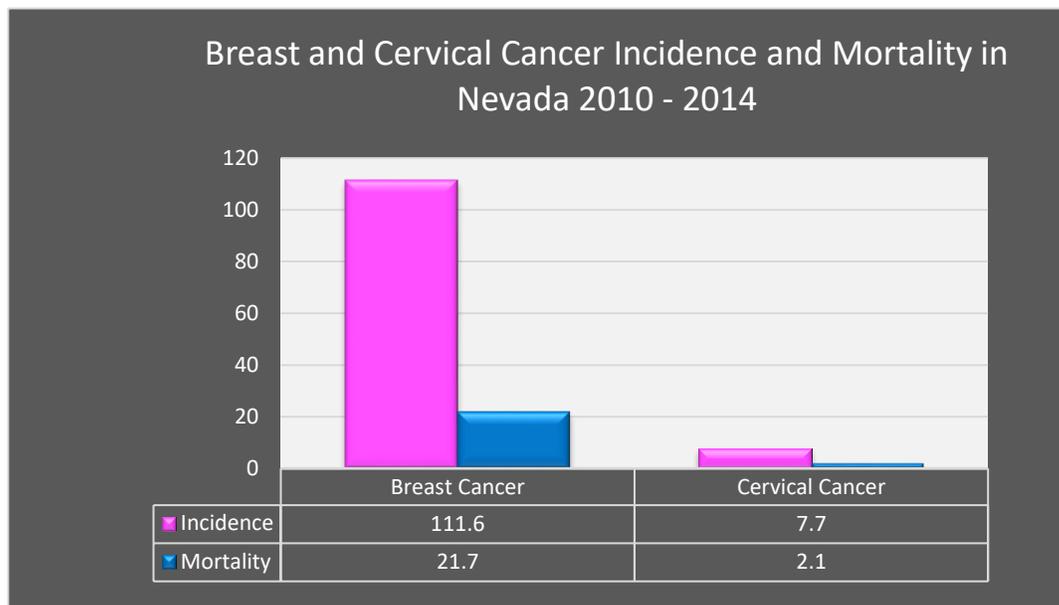
Breast cancer is the most commonly diagnosed cancer in women regardless of race or ethnicity.<sup>18</sup> Men can get breast cancer as well, but it is rare. For the purposes of this report, which is focused on screening, data will be only reported on women.

Breast cancer is the leading cause of cancer death among Hispanic women, and the second leading cause of death among Caucasian, African American, Asian/Pacific Islander, and American Indian/Alaska Native women.<sup>19</sup> Each year, it is estimated that over 250,000 women in the United States will be diagnosed with breast cancer and more than 50,000 women will die from the disease.<sup>20</sup> In Nevada, preliminary data indicates between 2010 and 2014, approximately 2,100 women were diagnosed with breast cancer each year and approximately 419 women died from the disease each year.<sup>21</sup>

Although cervical cancer was once the leading cause of death among women in the United States, cervical cancer cases and deaths have decreased significantly during the past 40 years.<sup>22</sup> This decline is essentially due to women getting regular Pap tests, which can detect early stage, treatable cancers.<sup>23</sup>

Each year, approximately 15,000 women in the United States are diagnosed with cervical cancer and 5,000 women die from the disease.<sup>24</sup> In Nevada, an annual average of 135 women are diagnosed with cervical cancer and 39 women die each year from the disease. Figure 3 describes the estimated breast and cervical cancer diagnosis and mortality rates in Nevada.

Figure 3: Breast and Cervical Cancer Incidence and Mortality in Nevada 2010-2014



**Data Source:** Preliminary data, Nevada Comprehensive Cancer Report, March 2017, The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

For both forms of cancer, the evidence is clear: proper screening tests reduce death rates. Screening tests can help find cancer at an early stage, before symptoms appear, when it can be treated more easily. For cervical cancer, screening with a Pap test can identify precancerous abnormalities, which can be treated, thus preventing cervical cancer altogether.

According to 2014 Behavioral Risk Factor Surveillance System (BRFSS) data, 74.8 percent of Nevada women aged 50 to 59 years or older received a mammogram within the past two years.<sup>25</sup> This is lower than the Healthy People 2020 target of 81.1 percent.<sup>26</sup> Similarly, 73.5 percent of Nevada women aged 18 years and older received a Pap test within the past three years.<sup>27</sup> This is lower than the Healthy People 2020 target of 93 percent.<sup>28</sup>

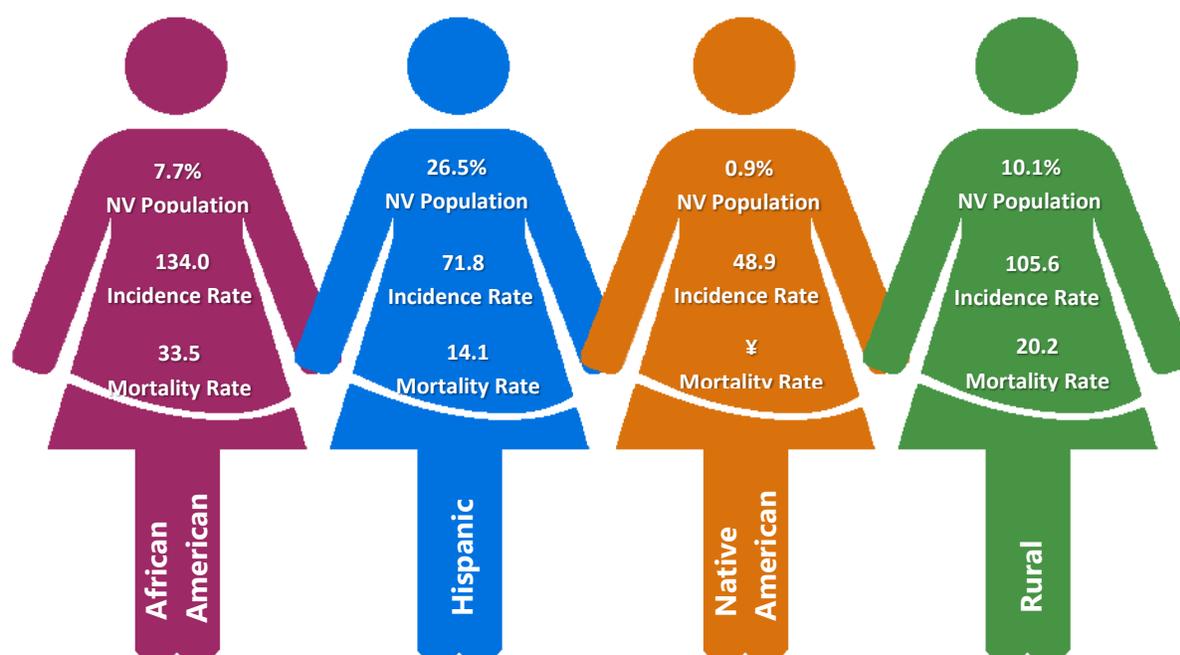
Women in Nevada face many barriers finding appropriate screening services. Some of these barriers include:

- Diagnostic services (mammogram/ultrasound) **not** covered by all insurance exchange programs
- Diagnostic services covered **but** with a high deductible
- Clients cannot afford co-pays associated with screening and diagnostic services
- Language barriers
- Affordable Care Act (ACA), open enrollment time restrictions
- Provider shortage

## PRIORITY POPULATION

In Nevada, there are specific populations that are most impacted by breast and cervical cancer: African American women, Native American women, women of Hispanic ethnicity, and women living in rural areas are considered high priority in Nevada.<sup>29</sup> African American women have a higher mortality rate from breast and cervical cancer compared to women of other races and ethnicities. Women of Hispanic ethnicity are among the fastest growing populations in Nevada, and are also more likely to have late-stage diagnosis.<sup>30</sup> Native American women have lower incidence rates of breast and cervical cancer, however, data is limited due to lack of participation in cancer registries.<sup>31</sup> Women living in rural and frontier areas are disproportionately diagnosed with later stage cancer, highlighting access issues which present significant barriers to health care in these communities.

Figure 4: Nevada's Priority Populations



Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

¥ Rate unreliable due to very low case counts.

## AFRICAN AMERICAN WOMEN

In Nevada, from 2006 to 2015, the total African American population grew by 20 percent.<sup>32</sup> Behavioral Risk Factor Surveillance Survey (BRFSS) data shows the proportion of African American women in Nevada aged 40 and over who have had a mammogram within the last two years has decreased from 77.2 percent in 2012 to 54.5 percent in 2014. Nevada women aged 50 and over who had a mammogram within the past two years decreased from 77.7 percent in 2012 to 71.27 percent in 2014.<sup>33</sup>

African American women suffer disproportionately from the effects of breast cancer and although their incidence rates have been decreasing, they have higher rates of breast cancer incidence than women who identify as Asian, Native American, or Hispanic.<sup>34</sup> African American women are more likely to have factors associated with poor prognosis such as late-stage cancer diagnosis, higher grade diagnosis, and negative hormone receptor status (presence of proteins found in cancer cells) compared to cancer diagnosis in Caucasian women. In addition, diagnosis rates for African American women have declined more slowly over the most recent decade than they have for Caucasian women (1.4 percent vs. 2.1 percent per year), which has resulted in continued and growing disparities.<sup>35</sup>

African American women have a 34 percent higher incidence rate of cervical cancer than Caucasian women. Although, the incidence rate has dropped dramatically in recent years due to increased early detection and screening, and therefore the prevention of cervical cancer. From 2000-2009, death rates from cervical cancer dropped faster for African Americans than Caucasians (2.6 percent per year vs. 1.9 percent per year), but African American women still remain twice as likely to die from the disease.<sup>36</sup> Access to Healthcare Network is a resource for women to receive information on where to receive breast cancer support, (877) 469-4934 <https://www.accesstohealthcare.org/services-individuals/womens-health-connection>.

## HISPANIC WOMEN

The Hispanic population is the fastest growing population in Nevada, and increased by 31 percent from 2006-2015. In 2014, approximately 41 percent of the Hispanic population was uninsured.<sup>37</sup>

Although Hispanic women have a 26 percent lower incidence rate of breast cancer than Caucasian women, they are more likely to have their cancer diagnosed at a later stage and to be diagnosed with tumors that are larger and hormone receptor negative, making the cancer more difficult to treat.<sup>38</sup> This disparity can be attributed to lower rates of mammography screening and delayed follow up on abnormal screening results or after self-discovered breast abnormalities.<sup>39</sup>

In addition, Hispanic women are more likely to die from breast cancer than Caucasian women due to access to care barriers and treatment disparities.<sup>40</sup> The Mexican Consulate is a resource for women to receive information on where to receive breast cancer screenings and support, (702) 477-2700 <http://consulmex.sre.gob.mx/lasvegas/>.

Hispanic women in the United States are 64 percent more likely than Caucasian women to be diagnosed with cervical cancer. While cervical and colorectal cancers are the two cancers that can actually be prevented through screening and removal of lesions, the low rates of screening and poor adherence to follow up after screening in Hispanic populations contribute to the disproportionately high rates of cervical cancer seen in this population.<sup>41</sup>

## NATIVE AMERICAN WOMEN

Native American women have among the lowest incidence rates of breast and cervical cancer, however, they have a significantly higher mortality rate for cervical cancer than Caucasian women.<sup>42</sup>

Unfortunately, Native American women are underrepresented in the NCCR. “Studies that estimate misclassification among American Indians/Alaska Natives using cancer registry data report these rates are underreported by 40 to 57 percent, depending on the region of the country.<sup>43</sup> Native Americans also have a low participation rate in any type of cancer clinical trials or research.

The Indian Health Service (IHS) was established to provide federally funded health care for Native Americans. However, access to health care is determined by place of residence and degree of Indian blood or tribal enrollment. Native Americans are not recognized, served or counted as Native Americans by the federal government unless they fall within certain definitions. In addition, due to the limited number of IHS facilities, Native American women often have to travel long distances to receive medical care.

Even when Native American women qualify for federal Indian health care, mammography is relatively new to most Indian Health Service (IHS) programs. Some IHS facilities do not have mammography equipment, so women have to be referred elsewhere, and follow-up is often limited. Native American women who desire a mammogram often go without for these and other reasons.<sup>44</sup>

## RURAL AND GEOGRAPHICALLY ISOLATED

Breast and cervical cancer patients in rural and frontier communities are disproportionately diagnosed with later stage cancer, suggesting access issues present significant barriers to health care in these communities.

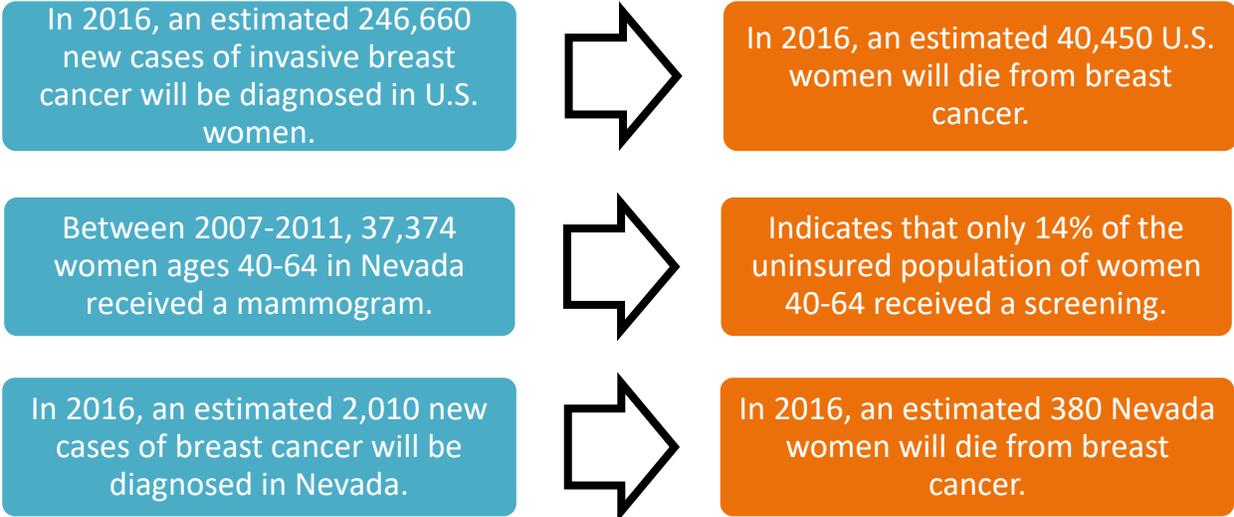
Multiple studies have shown that women in rural and frontier regions of the United States have significantly higher rates of cervical cancer than those in urban areas, with lower survival rates reflected in rural and frontier areas as well, particularly for African American women.<sup>45</sup> With 286,251 residents in the state’s 14 rural and frontier counties, women in these areas face serious health care challenges.<sup>46</sup>

In addition to the geographical isolation issues in the rural and frontier regions, 22.9 percent of uninsured Nevadans under the age of 65 live in rural Nevada in 2012.<sup>47</sup> This is disproportionately higher given that only 10.7 percent of Nevada’s total 2,890,845 population reside in rural/frontier areas.

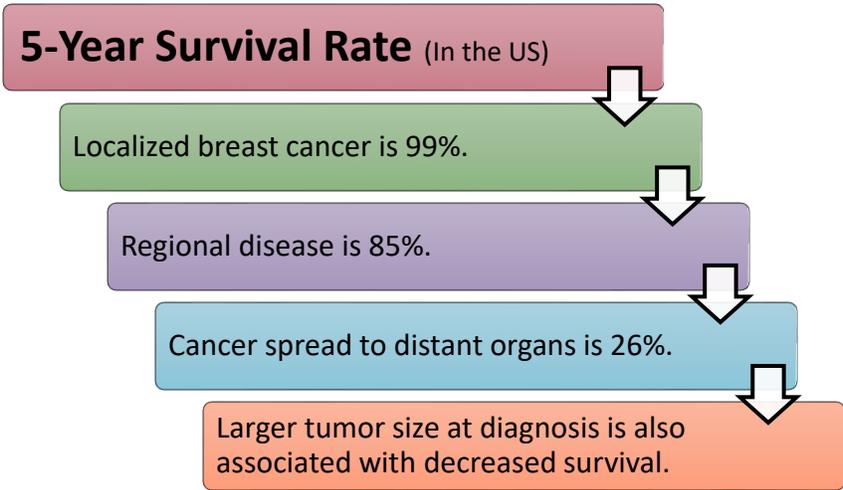
# NEVADA BREAST AND CERVICAL CANCER STATISTICS AND RISK FACTORS

The following sections detail breast and cervical cancer facts and statistics, including common risk factors as well as risk reduction methods.

## BREAST CANCER FACTS AND STATISTICS<sup>48,49</sup>



There are an estimated 2.8 million breast cancer survivors living in the U.S.



Breast cancer mortality rate has decreased since 1989. The decline is attributed to earlier detection, improved treatments, and possibly, decreased incidence as a result of declining use of postmenopausal hormone therapy.

## RISK FACTORS<sup>50</sup>

<p><b><u>Gender</u></b></p> <p>Female gender is the most important risk factor for breast cancer. Men can develop breast cancer, but the risk for females is about 100 times greater.</p>	<p><b><u>Age</u></b></p> <p>As women age, the risk of developing breast cancer increases. About 66 percent of all invasive breast cancers are diagnosed in women ages 55 and older, while about 12 percent are diagnosed in women younger than age 45.</p>
<p><b><u>Weight</u></b></p> <p>Excess weight (as measured by body mass index) and/or weight gain after menopause is associated with a higher risk of breast cancer. In contrast, excess weight in premenopausal women has been associated with a lower risk. The reason for this observed relationship in premenopausal women is unclear.</p>	<p><b><u>Alcohol</u></b></p> <p>Compared with nondrinkers, women who drink alcoholic beverages are at increased risk. The risk increases with the amount of alcohol consumed. Risk for those who consume two to five drinks daily is increased by about 1.5 times normal.</p>
<p><b><u>Height</u></b></p> <p>Height has been associated with an increased risk of breast cancer in a majority of studies. Risk is about 20 percent greater for women 69 inches or taller as compared with women less than 63 inches tall.</p>	<p><b><u>Race/Ethnicity</u></b></p> <p>In the U.S., Caucasian women are slightly more likely to develop breast cancer than are African American women, although African Americans are more likely to die from this disease. Asian, Hispanic, and Native American women have a lower risk than either Caucasian or African American women of developing and dying from breast cancer.</p>
<p><b><u>Family History</u></b></p> <p>Risk is increased for women whose close relatives have breast cancer. In general, the more biological relatives with breast cancer, especially relatives diagnosed before age 50, the higher a woman's risk. Less than 15 percent of women with breast cancer have a positive family history in a first degree relative.</p>	<p><b><u>Personal History of Breast Cancer</u></b></p> <p>A history of breast cancer in one breast increases the risk of developing a new cancer in the other breast or in another part of the same breast by 3 to 4 times.</p>

### **Radiation**

Risk is strongly increased for women treated with radiation to the chest for another cancer as children or young adults (as with Hodgkin’s lymphoma). The risk is highest for those treated during adolescence, when the breasts are still developing. The most vulnerable ages appear to be between 10 to 14.

### **Hormone Therapy**

Using combined hormone therapy after menopause (estrogen and progesterone) increases breast cancer risk for current or recent users, especially if used for longer than two to three years. The use of estrogen alone after menopause does not appear to increase the risk of developing breast cancer, however, when used long term (> 10 years), it may increase the risk for ovarian cancer per some studies. Both combined hormone therapy and estrogen therapy alone also appear to increase the risk of heart disease, blood clots, and strokes.

### **Dense Breast Tissue**

Compared to the same age women with less dense breast tissue, women whose mammograms show extremely dense breast tissue (usually defined as  $\geq 75\%$ ) are at 2.1 to 2.3 times higher risk for breast cancer, while women with heterogeneously dense breasts (usually defined as 51-75%) are at a 1.2 to 1.5 times higher risk. Dense breast tissue can also make it harder to detect breast cancer with mammography. It is estimated that 45 percent of women in the U.S. have dense breast tissue. Each One Tell One is a Nevada-based initiative to raise awareness about dense breasts. Information about their efforts can be found at [www.eachonetellone.com](http://www.eachonetellone.com).

### **Benign Breast Conditions**

There is a slight to strong increase in risk for women with certain types of abnormalities found with a breast biopsy, depending upon the type of abnormality. Non-proliferative lesions may have a slight effect on breast cancer risk. Proliferative lesions without atypia increase risk 1.5 to 2 times normal. Proliferative lesions with atypia (i.e., ADH, ALH) increase a woman’s risk by 3.5 to 5 times.

### **Genetic Factors**

Certain gene mutations strongly increase a woman’s risk. An estimated 5 percent to 10 percent of all breast cancers are directly attributable to inherited gene mutations, most often to mutations in the BRCA1 or BRCA2 genes. In the U.S., BRCA mutations are more common in Jewish women of Ashkenazi origin, but they can occur in any racial or ethnic group. Other mutations in the genes ATM, TP53, CHEK2, PTEN, CDH1, STK11 also increase breast cancer risk, but these are rarer and do not increase risk as much as BRCA genes. Genetic testing is available specifically for BRCA1 and BRCA2. If tested positive for BRCA genes, enhanced screening, prophylactic surgery, and chemoprevention are available preventive measures.<sup>51</sup>

### Other Factors

Exposure to certain environmental factors and conditions may also increase a woman's risk of developing breast cancer. Currently, there is conflicting evidence regarding the risk of environmental exposure to organochlorines (some exert a weak estrogenic effect), tobacco smoke, as well as night shift work. Research is ongoing in these and other areas of our current environment with potential for effecting breast cancer risk.<sup>52</sup>

## RISK REDUCTION<sup>53</sup>

### Physical Activity

- Regular physical exercise has been shown to provide some protection against breast cancer, especially in postmenopausal women. The reduction in risk for physically active women compared with women who are least active may be as much as 25%.

### Diet

- A diet that is rich in vegetables, fruit, poultry, fish, and low-fat dairy products has been associated with a lower risk of breast cancer in some studies. There is also some evidence that soy-rich diets may reduce risk. Overall, however, the influence of dietary factors on breast cancer risk remains inconclusive.

### Breastfeeding

- The risk reducing effect of breastfeeding has been shown in multiple studies, especially if the breastfeeding lasts 1.5 to 2 years. For every year of breastfeeding, the reduction in relative risk has been estimated at approximately at 4%.

CERVICAL CANCER FACTS AND STATISTICS<sup>54</sup>

In 2016, an estimated 12,990 new cases of invasive cervical cancer will be diagnosed in U.S. women.



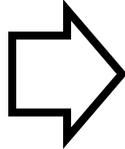
In 2016, an estimated 4,120 U.S. women will die from cervical cancer.

Between 2007-2011, 23,584 women ages 40-64 in Nevada received a Pap screening.



Indicates that only 9% of the uninsured population of women ages 40-64 received a screening.

In Nevada, an annual average of 104 cases are newly diagnosed every year (2008-2012).



In Nevada, this results in 30 deaths by cervical cancer each year (2008-2012).



There are an estimated 250,000 cervical cancer survivors living in the U.S.

**5-Year Survival Rate** (In the US)

Detected at earliest stages is 92%.

Regional disease is 57%.

Cancer spread to distant organs is 17%.

In general, the prognosis is effected by the extend of the disease at the time of diagnosis.



Since 1955

Between 1955 and 1992, the rate of cervical cancer deaths in the U.S. declined by nearly 70%. The rate continued declining until 2003 before stabilizing in subsequent years. The overall decline is mainly attributed to the increased use of the Pap test.

## RISK FACTORS<sup>55</sup>

### **Human Papillomavirus (HPV)**

- Virtually all (99.7%) cervical cancers are caused by persistent infection with a high-risk type of human papillomavirus (HPV). There are approximately 15 high-risk (oncogenic) types of HPV, with just two of these, 16 and 18, responsible for about 70 percent of all cervical cancers.
- Although HPV is most commonly spread from one person to another through sexual activity, it can also be spread without sex, by skin-to-skin contact with an area of the body infected with HPV.
- More than half of all sexually active people will be infected with one or more HPV types at some point during their lives. However, the vast majority of HPV infections do not lead to cervical cancer. For cervical cancer to develop, a high-risk infection must also be persistent.
- Most HPV infections are transient. Up to 90 percent resolve within two to five years. On average, a newly diagnosed HPV infection in young women lasts from 8 to 13 months.
- Aging is a risk factor for persistent infection. The rate of persistent high-risk infection for women older than age 55 is 50 percent, compared with a persistence rate of 20 percent in women younger than age 25.
- While long-term infection is necessary for cervical cancer to develop, the vast majority of women with persistent high-risk infection do not develop cervical cancer.

### **Diet and Weight**

A diet low in fruits and vegetables, as well as being overweight, may place women at increased risk for developing cervical cancer.

### **Smoking**

The risk of cervical cancer is increased for women who smoke. Smoking not only exposes the body to cancer-causing chemicals but also weakens the immune system.

### **Family History**

A woman with a mother or sister with cervical cancer has two to three times the risk of women without this family history.

### **Diethylstilbestrol (DES) Therapy**

DES may increase the risk of a rare form of cervical cancer in women whose mothers took DES when pregnant. About 1 case of this rare form occurs in every 1,000 DES daughters. (DES was given to some pregnant women in the United States from 1940 to 1971.)

### **Chlamydia**

Some studies have shown higher relative risk in women whose blood test results show evidence of either past or current chlamydia infection.

### **Suppressed Immune System**

A weakened immune system, such as that caused by HIV or by drugs used for suppressing immune response, places women at higher risk for HPV infection and for cervical cancer.

### **Pregnancy at Young Age**

A first full-term pregnancy in women younger than age 17 nearly doubles the risk of developing cervical cancer later in life, as compared with women who had their first full-term pregnancy at age 25 and older.

### **Multiple Pregnancies**

Women with three or more full-term pregnancies have an increased risk of developing cervical cancer. Hormonal changes or weaker immune systems during pregnancy are possible reasons.

### **Oral Contraceptives**

The long-term use (five or more years) of oral contraceptives has been shown to increase the risk of developing cervical cancer. A collaborative analysis of data from 24 epidemiological studies found that risk increases with duration and declines after use ceases. After 10 or more years of cessation, risk appears to return to that of normal.

### **Sexual Activity**

The main risk factors for HPV infection through sexual activity are early onset of sexual activity, multiple sexual partners, and high-risk sexual partners. However, since HPV is so prevalent and most people do not have symptoms, any sexual encounter can be risky. Condoms can decrease the transmission of HPV. However, HPV lives on the skin, and condoms do not fully cover the areas where HPV lives.



## HPV Vaccines

- Patients should be vaccinated before becoming sexually active; that is, before they may be exposed to HPV. However, even for persons who have been infected with one or more HPV types, the vaccine can still prevent infection from other HPV types. Three FDA-approved vaccines are highly effective in preventing infection with the types of HPV they target. HPV types 16 and 18 are responsible for about 70 percent of all cervical cancers.
- Gardasil: Protects against HPV types 6, 11, 16, and 18. Gardasil is FDA approved for use in females ages 9 through 26 and males 9 through 21. It is recommended for men through age 26 whose immune system is weakened due to HIV infection, or other illness, or medications.
- Gardasil 9: Protects against HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 68. Gardasil 9 is FDA approved for use in both females and males. It is routinely given at 11 or 12 years of age, but may be given beginning at age 9 years through age 26.
- Cervarix: Protects against types 16 and 18. Cervarix is FDA approved for use in females ages 9 through 25.

## Screening

- Vaccination is not a substitute for screening with Pap tests. Even in women who have been vaccinated, cervical cancer can still occur. Screening is the most effective means for finding changes in the cervix before cancer has a chance to develop.

## THE BREAST AND CERVICAL CANCER BURDEN IN NEVADA

The following sections detail the burden of breast and cervical cancer in Nevada. The data used to inform these sections was primarily gathered from the Nevada Demographer and The Office of Public Health Informatics and Epidemiology (OPHIE), although other sources were also utilized. When possible, data was provided for the longest time frame. However, due to the lack of availability of data for some years, the range may differ depending on the data set.

### NEVADA DEMOGRAPHICS

Nevada has been one of the nation's fastest growing states for the past five decades, primarily due to population growth in Clark and Washoe Counties. Although there are various methods to define urban, rural and frontier, in Nevada the majority of counties are rural or frontier.

The 2015 Census Bureau designates approximately 86.8 percent of the population resides in urban counties in Nevada, while the remaining 10.7 percent reside in rural or frontier counties.

Figure 5, illustrates the population density by counties grouped into regions, as well as the hospital resources within each county.

There are challenges specific to rural communities, as they tend to have an older population and often a significant lack of access to health resources. Older populations use a disproportionately higher amount of health resources and experience higher rates of disability and mortality.<sup>57</sup> In addition, Nevada is designated a health Care shortage area, specifically in specialty care which is particularly evident in rural areas. The specific counties that lack hospitals are:

- Esmeralda County
- Eureka County
- Storey County

Even those rural and frontier counties who do have access to a local hospital may face barriers as those facilities may not be equipped for specialty care, such as breast and cervical cancer, leaving those individuals to travel to outside counties to seek appropriate screening and treatment.

Figure 5: Nevada Population and Health Care Resources by County

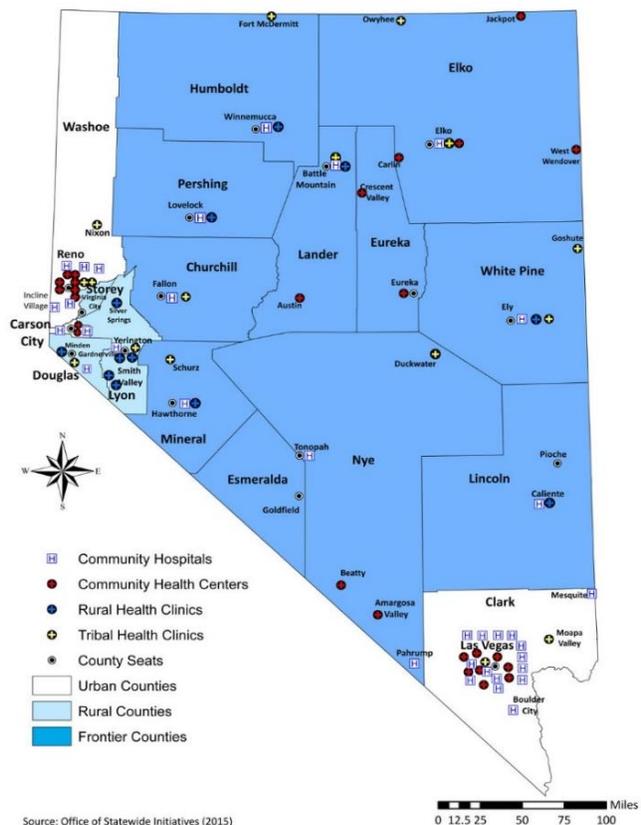


Figure 5: Many rural Nevada communities are far from medical care or medical care is insufficient for the needs of the population.

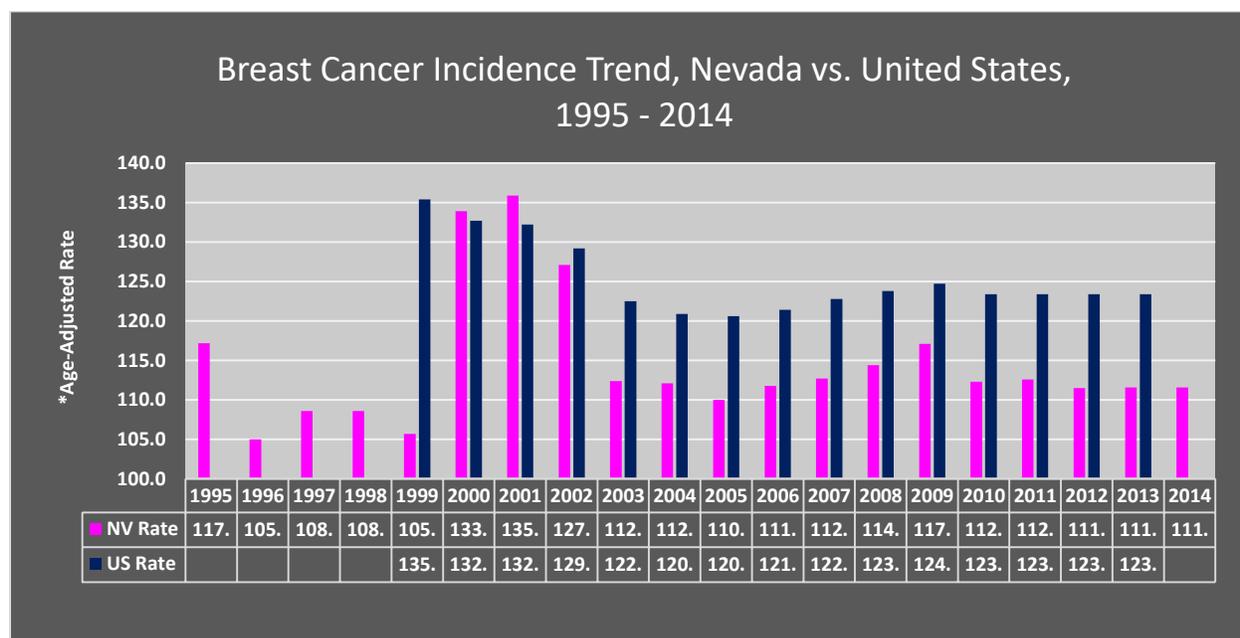
In Nevada, preliminary data indicates approximately 2,119 women were diagnosed with breast cancer each year from 2010 to 2014.<sup>58</sup> During the same time period, an average of 419 women died of breast cancer each year.<sup>59</sup> Breast cancer has a moderate mortality rate with one in every five women diagnosed dying from the disease.<sup>60</sup> The mortality rates for breast cancer have declined over the past decade and can be partially attributed to earlier diagnoses due to improved screening and treatment.<sup>61</sup>

While this is an improvement, the rate of breast cancer diagnosed among Caucasian and African American populations have been decreasing but are still much higher than other race/ethnicities. There are issues concerning access to screening and treatment for Native American women and women who live in rural or frontier areas in Nevada. Incidence and mortality rates for Asian women have been increasing.

### BREAST CANCER INCIDENCE IN NEVADA

The Nevada rate of breast cancer incidence has varied over a twenty-year period.

Figure 6: Breast Cancer Incidence Trend, Nevada vs. United States, 1995-2014



**Data Source:** Preliminary data, Nevada Comprehensive Cancer Report, April 2017, The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

While rates were rather stable during 1995-1999, the incidence rate increased considerably beginning in calendar year 2000.<sup>62</sup>

Rates stabilized in calendar year 2003 and have remained constant since that year. Breast cancer incidence rates also vary by counties in Nevada.

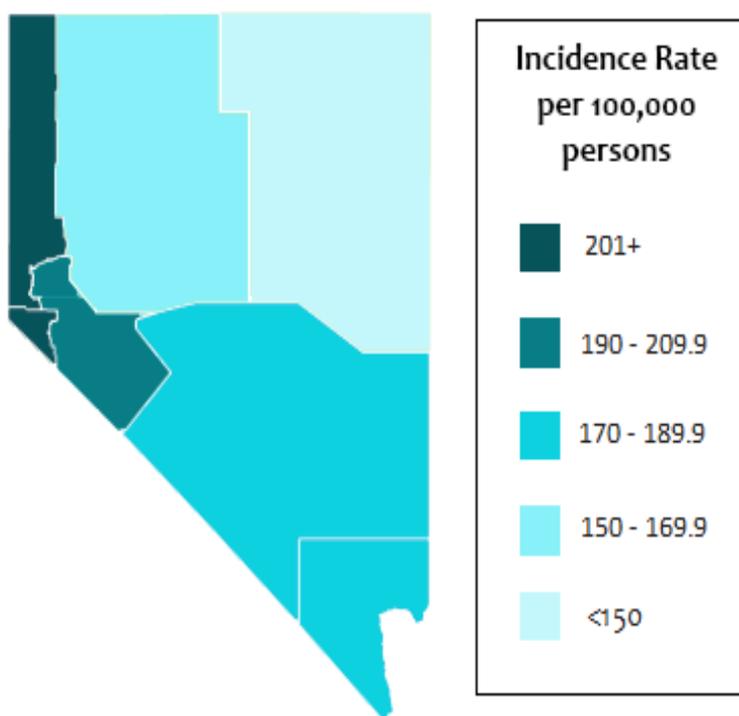
Figure 7 details each region's incidence rate. The highest rates can be found in urban areas specifically Washoe and Clark Counties.

Breast cancer diagnoses rates help explain the distribution of cancer in a population.

However, it is important to take into account that a person must have access to a health care provider in order to receive an early diagnosis and to receive

quality treatment. Many people living in rural areas lack access to a health care provider. Because of this barrier, it is likely that many with breast cancer are diagnosed in later stages and may not have the same access to quality treatment.

Figure 7: Breast Cancer Incidence Rate (2008 - 2012)



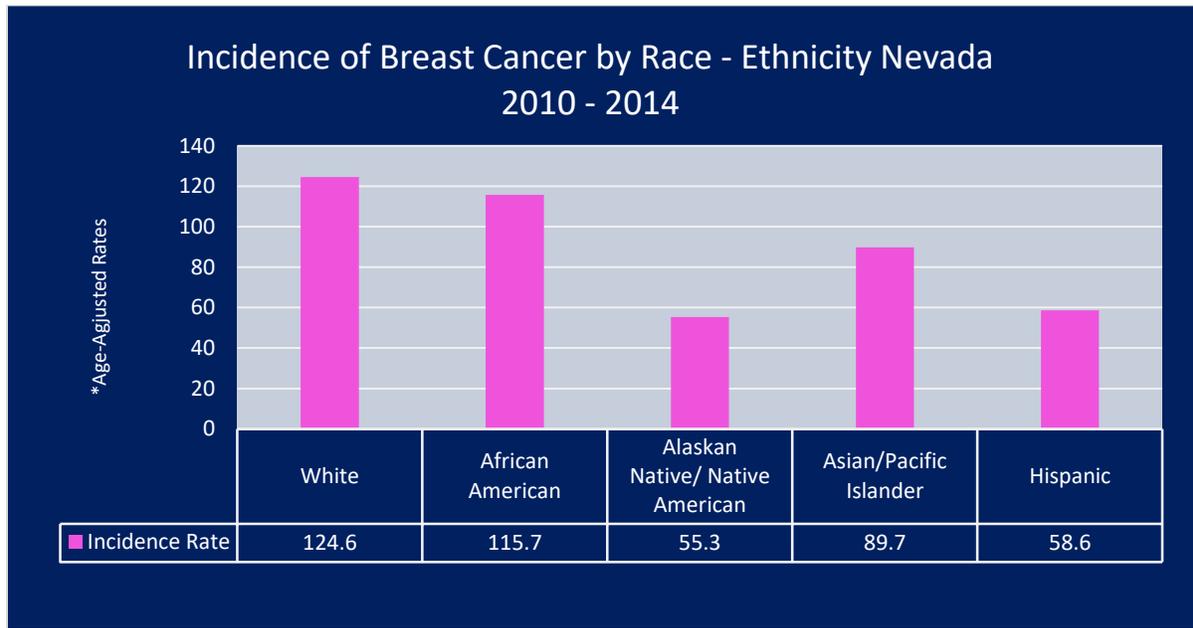
**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

## RACE AND ETHNICITY

In Nevada between 2010 to 2014, diagnosis rates among African American women were higher than all other race/ethnicities, taking into account the total number of women for each racial or ethnic group, see Figure 8.<sup>63</sup> Although the incidence rate for African Americans is the highest, it has been decreasing over the years while the incidence rate for Asians has been increasing.<sup>64</sup>

Figure 8: Incidence of Breast Cancer by Race - Ethnicity Nevada 2010 to 2014



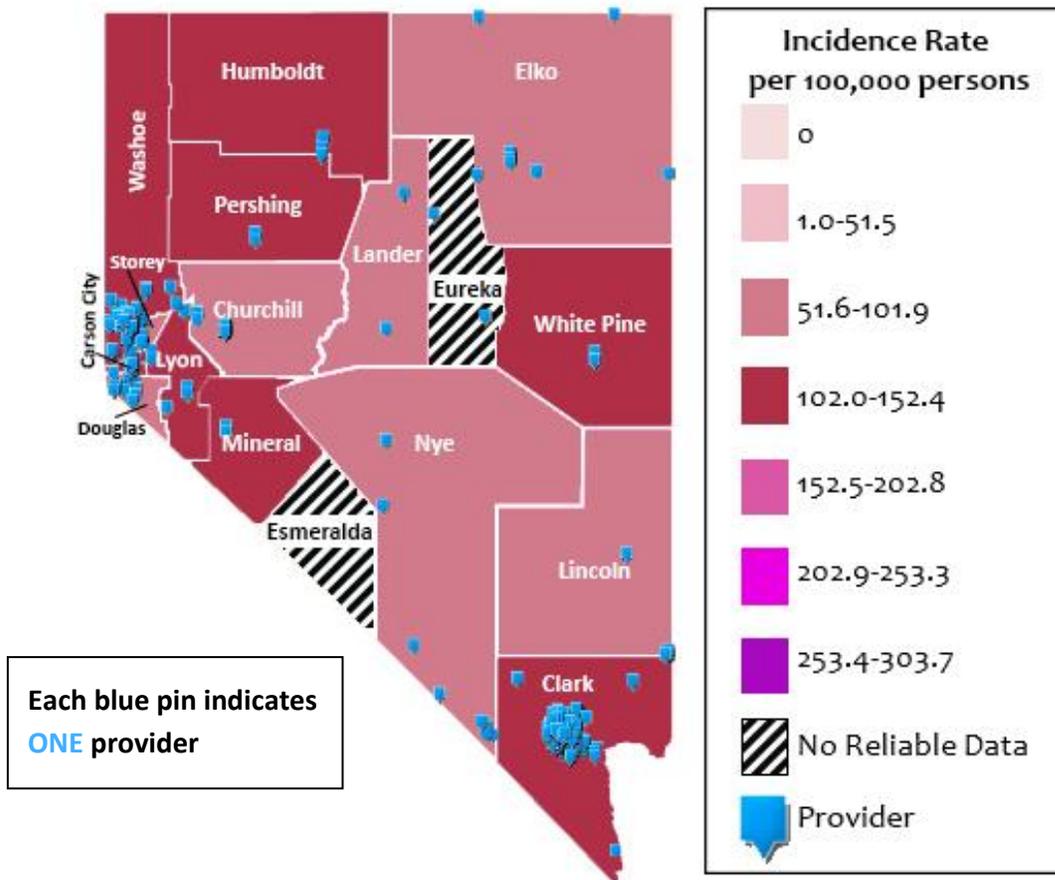
**Data Source:** Preliminary data from Nevada Comprehensive Cancer Report, January 2015, The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

In Nevada, preliminary data indicates 8,476 women were diagnosed with breast cancer from 2010 to 2014. Seventy-eight percent were Caucasian, six percent were Hispanic, seven percent were African American, six percent were Asian, and less than one percent were Native American.<sup>65</sup>

Breast cancer incidence rates also vary by counties in Nevada. From 2008-2012, women who were diagnosed with breast cancer in Nevada were more likely to be diagnosed at an earlier stage of cancer, with the exception of Humboldt County, where more women were diagnosed with late-stage breast cancer. There are a few counties where the stages of diagnosis cannot be determined due to lack of available data. Figure 9 specifies breast cancer incidence by county and the number of breast and cervical cancer health resources in each county.<sup>66</sup>

Figure 9: Breast Cancer Incidence by County 2008 - 2012



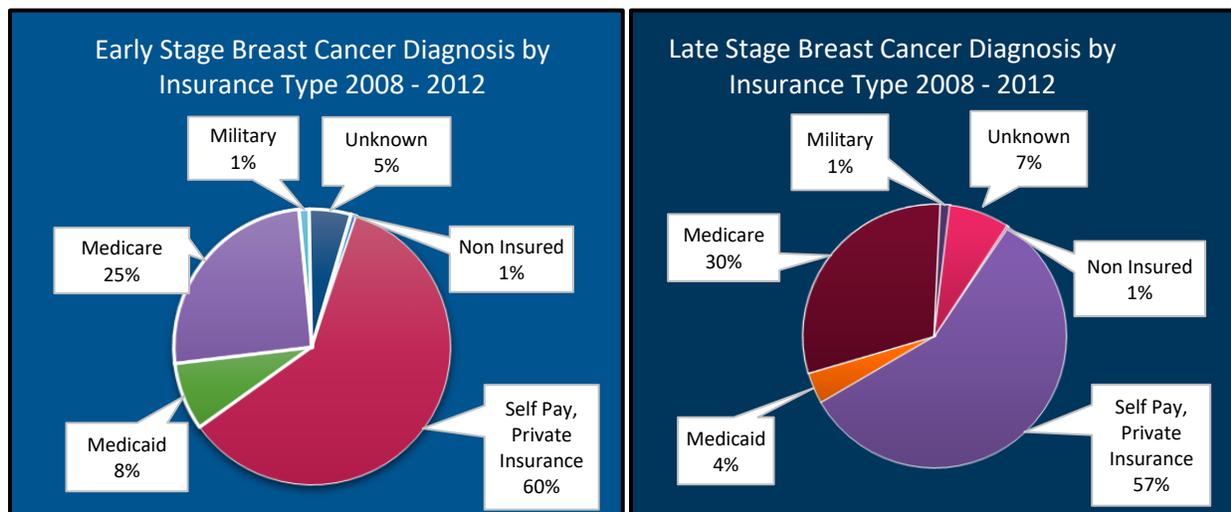
**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

Breast cancer diagnoses range from early- to late-stage. Early-stage breast cancer is defined as cancer that has not spread beyond the breast or the axillary lymph nodes. Late-stage breast cancer is defined as cancer that has spread beyond the breast to other organs in the body.<sup>67</sup>

The rate of early- and late-stage breast cancer diagnosis is also known to vary by insurance type. In Nevada, those who are self-pay or have private insurance are more likely to receive both early- and late-stage breast cancer diagnoses. Those who are non-insured are the least likely to receive early- and late-stage diagnoses, Figure 10.

Figure 10: Early- and Late-Stage Breast Cancer Diagnosis by Insurance Type, 2008 - 2012

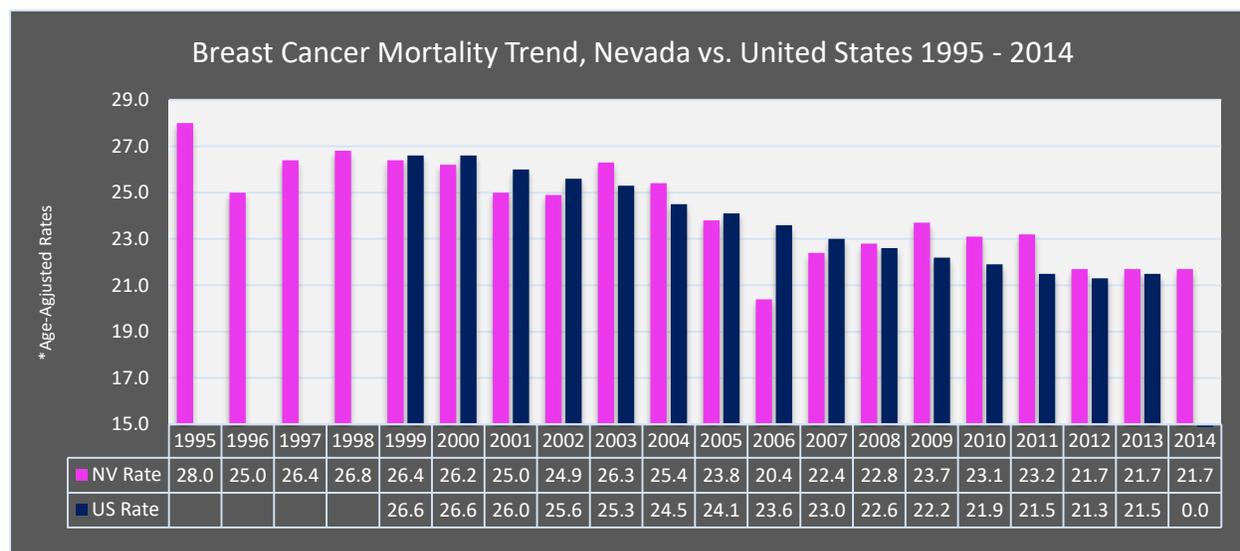


**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

### BREAST CANCER MORTALITY IN NEVADA

Overall, mortality rates for breast cancer have been decreasing in Nevada since 1995. Rates in Nevada seem to follow the same declining trend as seen in the United States.<sup>68</sup>

Figure 11: Breast Cancer Mortality Trend, Nevada vs. United States 1995-2014



**Data Source:** Preliminary Data, The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

Mortality rates vary both by area and race in Nevada. The breast cancer mortality rates are higher in Carson City and Washoe County compared to Clark County and lower in rural counties, which is anticipated as incidence rates are also higher in the more urban counties, Figure 11.<sup>69</sup>

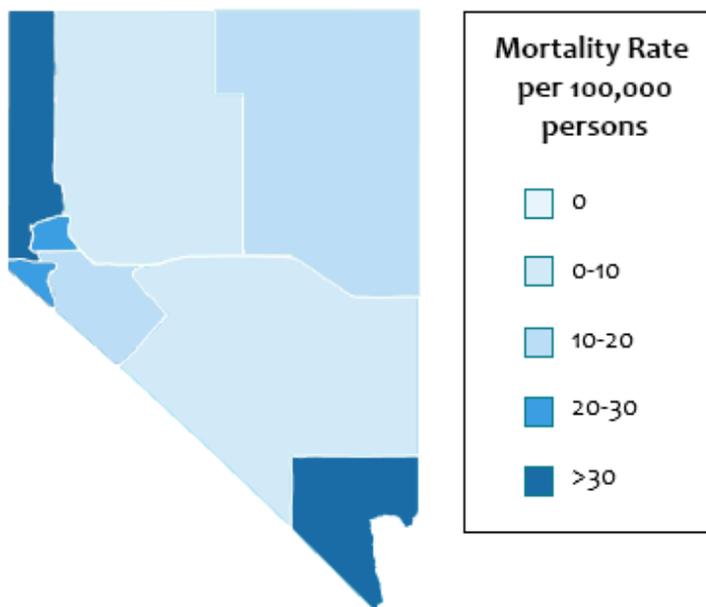
Due to the relatively low number of cases and deaths due to cervical cancer in Nevada, many of the data elements presented for breast cancer are not available for cervical cancer due to statistically unstable and/or suppressed rates. Cervical cancer is one of the only types of cancer that can be medically prevented due to the introduction of HPV vaccines into the population, which mirrors national trends.

Breast cancer disparities in Nevada, although consistent with national trends, may be indicative of a larger disparity issue in terms of health care provider access, and the lack of access to care for specific groups of Nevadans, in this case most notably African American women. Cancer care begins with diagnosis and has an extensive spectrum of care from diagnosis through treatment and into survivorship. Without access to care across this spectrum of cancer, even early diagnosis can still result in high mortality rates.

The Nevada breast cancer data is indicative of this issue as more African American women are being diagnosed early, yet African American women have the highest breast cancer mortality rate in Nevada.

While Asians have a mortality rate similar to the overall rate, Asian mortality rate has been increasing over the years. Mortality for Native American women is not reported due a low amount of data, Figure 13.<sup>70</sup>

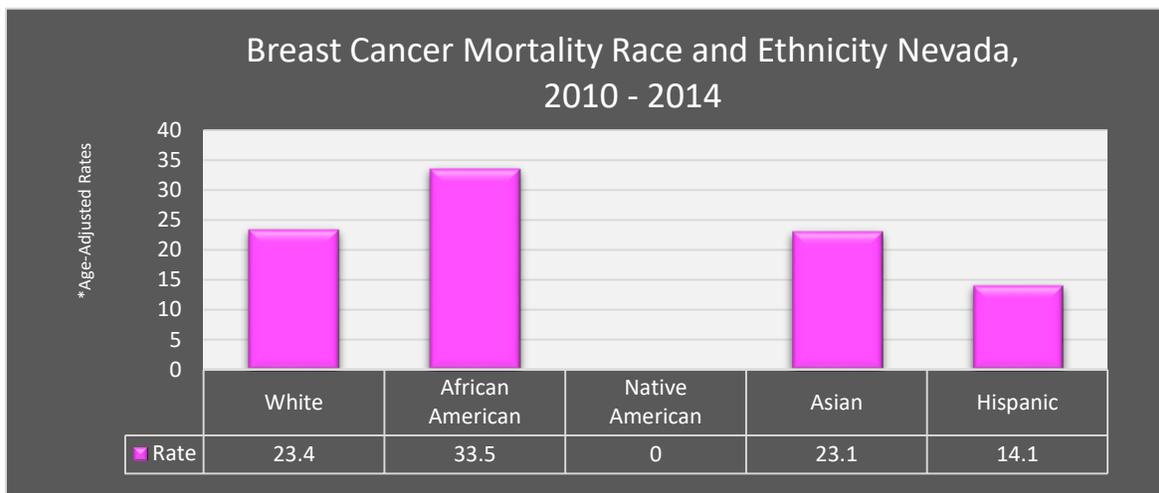
Figure 12: Breast Cancer Mortality Nevada 2008 - 2012



**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population

Figure 13: Breast Cancer Mortality Race and Ethnicity Nevada, 2010 - 2014



**Data Source:** Preliminary Data. The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population

## CERVICAL CANCER INCIDENCE IN NEVADA

Cervical cancer is one of the only types of cancer that can be medically prevented due to the introduction of HPV vaccines. Due to the relatively low number of cases and deaths due to cervical cancer in Nevada, many of the data elements that were presented for breast cancer are not available for cervical cancer due to statistically unstable and/or suppressed rates.

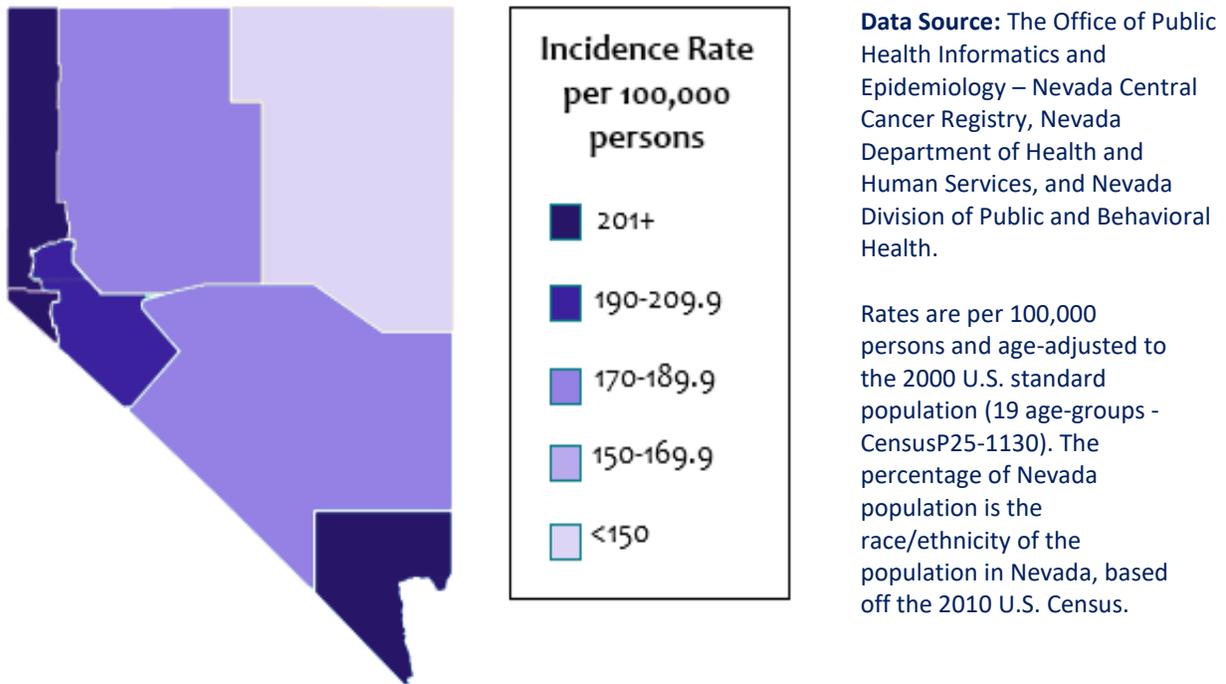
Between 2008 and 2012, on average thirty women died of cervical cancer each year in Nevada.



**One** in every **three** women diagnosed with cervical cancer died from the disease in Nevada. Although nearly one-third of women who receive a cervical cancer diagnosis died, the overall age-adjusted mortality rate for cervical cancer is 2.2 women per 100,000 women.<sup>71</sup>

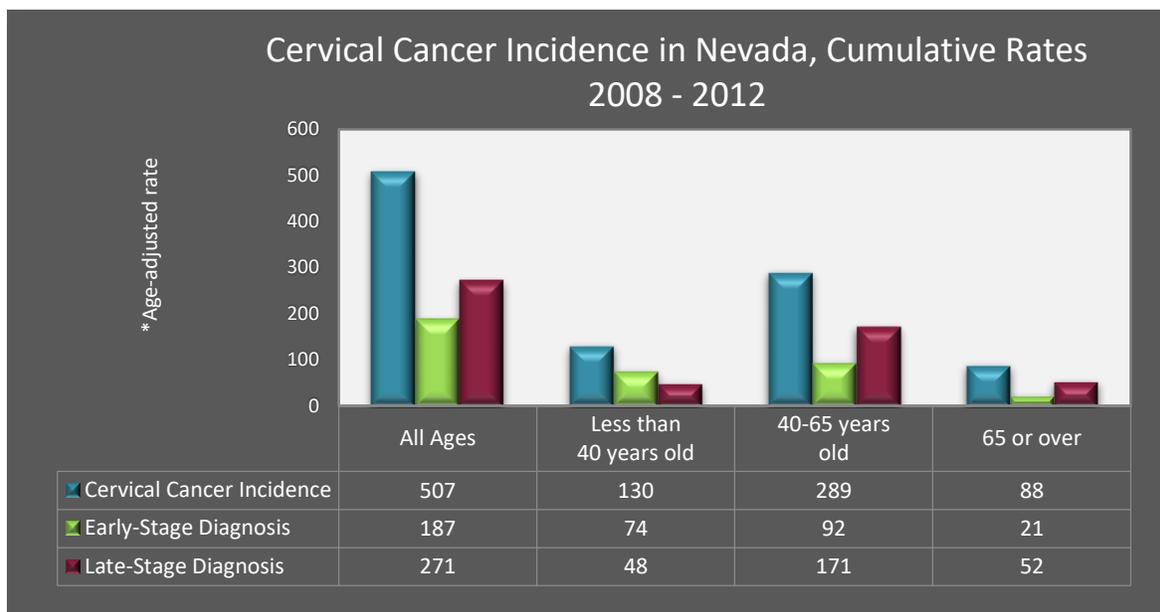
Although the overall incidence rate for cervical cancer is much lower than breast cancer, unlike breast cancer, women with cervical cancer are more often being diagnosed at a late stage.

Figure 14: Cervical Cancer Incidence Nevada 2008 - 2012



The highest number of cases of late stage diagnoses is found among women between 40-64 years of age, see Figure 15.

Figure 15: Cervical Cancer Incidence in Nevada, Cumulative Rates 2008 - 2012



**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

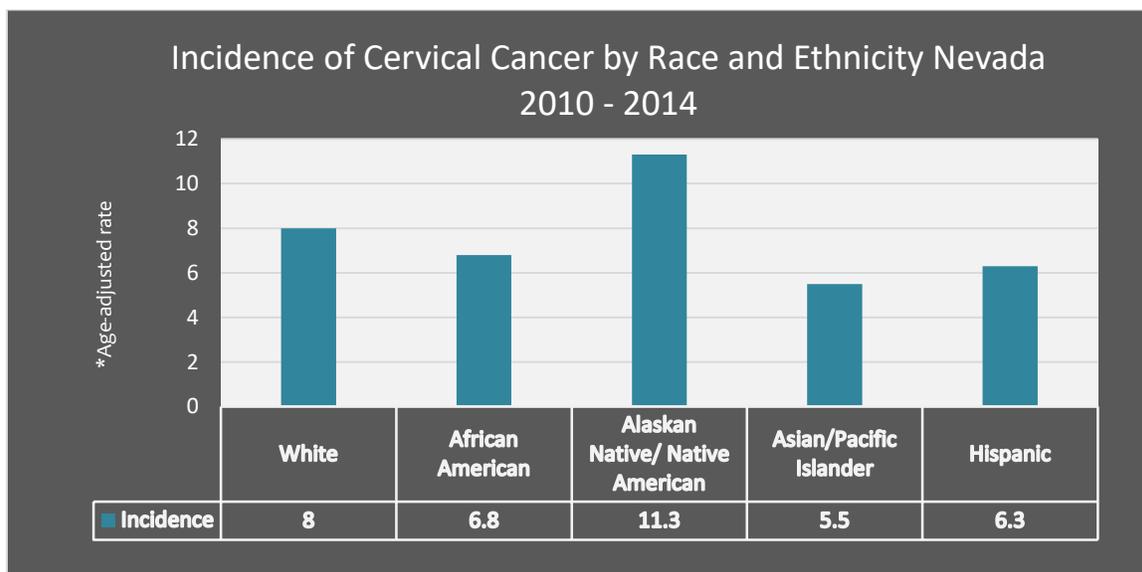
\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

## RACE AND ETHNICITY

Similar to breast cancer, the diagnosis rates for cervical cancer among African American women are higher than for all other race/ethnicities. This takes into account the total number of women for each racial or ethnic group and displays how many are diagnosed for every 100,000 women.

Preliminary data indicates from 2010-2014, a total of 135 women were diagnosed with cervical cancer each year in Nevada of which 10 percent were Caucasian, 21 percent were Hispanic, 13 percent were African American, and nine percent were Asian.<sup>72</sup>

Figure 16: Incidence of Cervical Cancer by Race and Ethnicity Nevada 2010-2014

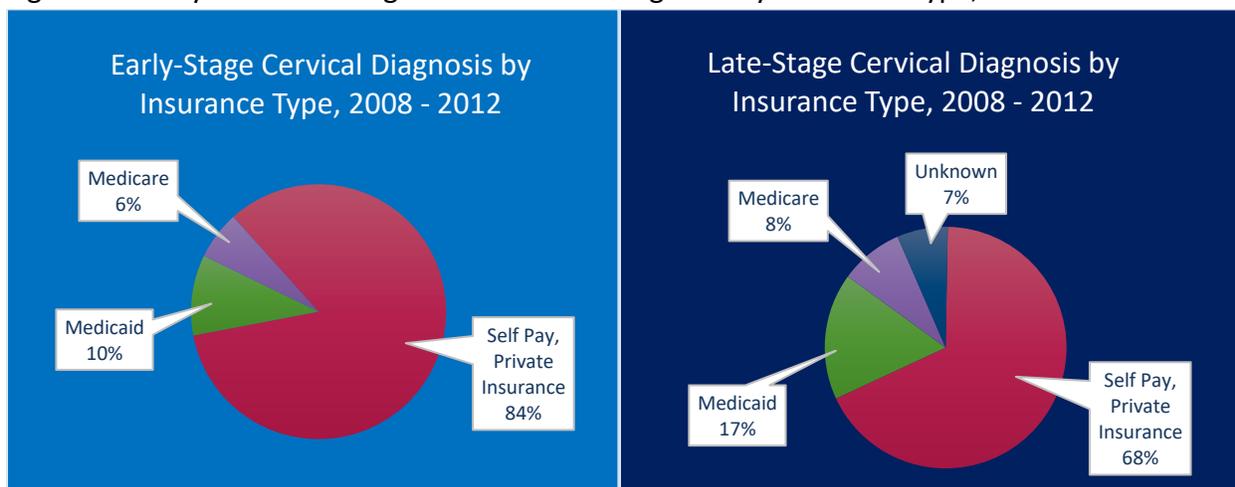


**Data Source:** The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health. Preliminary Data.

\*Rates are per 100,000 persons and age-adjusted to the 2000 U.S. Census standard population.

The rate of early- and late-stage cervical cancer diagnosis is also known to vary by insurance type. In Nevada, those who are self-pay or have private insurance are more likely to receive both early- and late-stage breast cancer diagnoses.

Figure 17: Early- and Late-Stage Breast Cancer Diagnosis by Insurance Type, 2008-2012

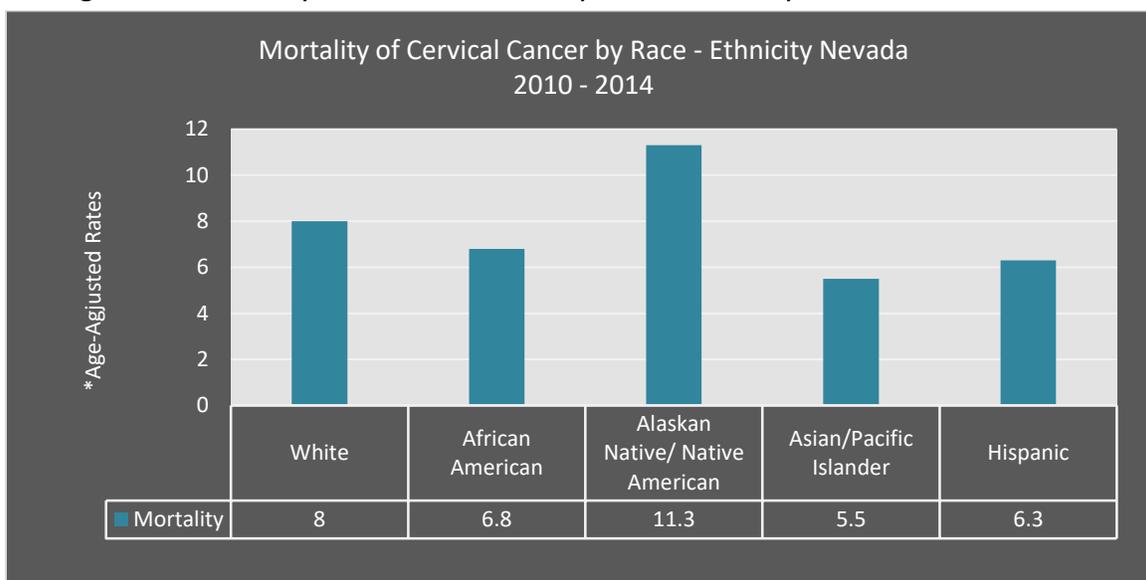


**Data Source:** The Office of Public Health Informatics and Epidemiology Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

### CERVICAL CANCER MORTALITY

The mortality rate for cervical cancer in Nevada was 2.1 for every 100,000 women. Cervical cancer mortality rates varied by race/ethnicity. African American women were more likely to die of cervical cancer than any other population.<sup>73</sup>

Figure 18: Mortality of Cervical Cancer by Race - Ethnicity Nevada 2010 - 2014



**Data Source:** Preliminary Data. The Office of Public Health Informatics and Epidemiology – Nevada Central Cancer Registry, Nevada Department of Health and Human Services, and Nevada Division of Public and Behavioral Health.

\*Rates are per 100,000 persons and age-adjusted to the 2000 US Census standard population.

## THE ECONOMIC BURDEN OF CANCER

Cancer is expensive not only to the patient, but to national and local public health systems as well.<sup>74</sup> Researchers have identified the economic burden of breast cancer to be \$14,202 per year for individuals under the age of 65 and \$14,351 for individuals over the age of 65 and older.<sup>75</sup>

The Agency for Healthcare Research and Quality (AHRQ) estimates the direct medical costs (total of all health care costs) for cancer in the U.S. in 2011 were \$88.7 billion.

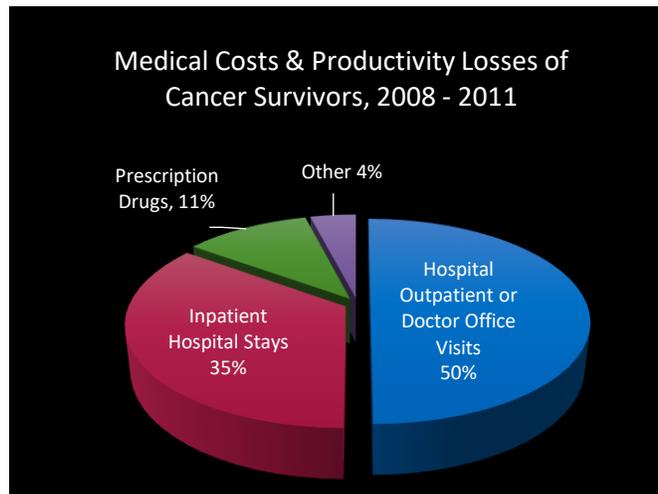
- 50 percent of the cost is hospital related
- Outpatient or doctor office visits
- 35 percent of the cost is for inpatient hospital stays
- 11 percent of the cost is for prescription drugs
- 4 percent is other<sup>76</sup>

In addition to patients undergoing cancer treatment, survivors of cancer face economic burdens as well due to missed work, high medical costs and bills, and

reduced productivity. A study by the Centers for Disease Control and Prevention (CDC) found female cancer survivors had \$8,400 in annual medical costs per person and \$4,000 in productivity losses compared to those without cancer. Study findings indicate:

- Cancer survivors are more likely to be female, non-Hispanic white, have multiple chronic conditions, or to be in fair or poor health.
- Employment disability accounted for an estimated 75 percent of lost productivity among survivors.
- Among survivors who were employed at the time of their diagnosis, cancer and its treatment interfered with physical tasks (25%) and mental tasks required by the job (14%); almost 25 percent of cancer survivors felt less productive at work.
- Female cancer survivors were significantly more likely than male survivors to make changes to work because of the cancer.
- Ten percent of survivors aged 65 years and younger were uninsured and likely to have a larger financial burden compared to survivors with some source of payment for medical service.<sup>77</sup>

Figure 19: Direct Medical Costs for Cancer in the US, 2008-2011



Source: American Cancer Society. Cancer Facts & Figures 2015.

## WOMEN'S HEALTH CONNECTION AND RESOURCES FOR WOMEN

To increase awareness of breast and cervical cancer screening services for women in Nevada, WHC will enhance the program's social media platform by creating a text messaging campaign which will include a text messaging reminder recall and health promotions system for National Breast Cancer Awareness Month in October and Cervical Health Awareness month in January. WHC will complement outreach effectiveness with video testimonials of cancer survivors and educational videos on the importance of routine screening. All of the social media campaigns will target Nevada women, ages 21-65, on the importance of breast and cervical cancer screenings.

Figure 20: Breast and cervical cancer resources for women in Nevada

	Screening	Treatment	Living Expenses
<b>Northern Nevada</b>			
<b>Cancer Awareness of Nevada</b>		X	
<b>Empowered Lives Through the Cancer Journey (Sierra Nevada Cancer Center)</b>			X
<b>Moms on the Run</b>			X
<b>Northern Nevada HOPES</b>	X		
<b>Reno/Nevada Cancer Foundation</b>		X	X
<b>Renown Institute for Cancer</b>		X	
<b>Revivals Health &amp; Wellness Council</b>	X	X	X
<b>Women's Health Connection</b>	X		
<b>Southern Nevada</b>			
<b>Mesquite Cancer HELP Society</b>		X	X
<b>ORION (Comp Cancer Centers)</b>			X
<b>R.E.D. Rose Program</b>	X		
<b>Sisters Network (For African American Women)</b>	X	X	X
<b>Volunteers in Medicine</b>	X		
<b>National Organizations</b>			
<b>21st Century C.A.R.E.</b>			X
<b>CancerCare</b>			X
<b>Patient Advocate Foundation</b>		X	
<b>Susan G. Komen</b>		X	

In addition, Federally Qualified Health Centers (FQHCs) provide cancer screenings to underserved women. Here is a website to learn more about FQHCs and their locations throughout Nevada [https://npidb.org/organizations/ambulatory\\_health\\_care/federally-qualified-health-center-fqhc\\_261qf0400x/nv/](https://npidb.org/organizations/ambulatory_health_care/federally-qualified-health-center-fqhc_261qf0400x/nv/)

## NEVADA'S PLAN FOR ACTION

The following section details Nevada's plan for action for breast and cervical cancer screening, diagnosis, and treatment. This includes better screening and access, increased planning and investment, and the 2016-2020 Nevada Comprehensive Cancer Control Plan, which has several goals and objectives related to breast and cervical cancer.

### SCREENING AND ACCESS

The implementation of the Patient Protection and Affordable Care Act (ACA) has brought significant changes by ensuring all Americans have access to quality affordable health insurance. The law requires private health insurance plans to cover clinical preventive services, such as breast and cervical cancer screening, with no cost sharing. This means many WHC clients are eligible to receive breast and cervical cancer screenings through other funding sources, including Medicaid Expansion and private health insurance, leaving the WHC program as "payer of last resort."

The Health Insurance Marketplace offers subsidized insurance coverage to qualifying individuals. The coverage varies by state and insurance carrier. Market insurers are required to cover the 10 essential benefits while diagnostic services are always covered. Even with the implementation of the ACA, and Medicaid Expansion in Nevada, there remains a disproportionate number of uninsured women.

According to Small Area Health Insurance Estimates (SAHIE) data in 2012, 25.9 percent of women ages 18 to 64 were uninsured while in 2014, 18.1 percent of Nevada women ages 18 to 64 years of age remain uninsured. In the last two years more women have insurance coverage and are not receiving lifesaving screening services.<sup>78</sup>

In addition, Nevada needs a safety net for women age 39 and younger, who live at or below 250 percent of the Federal Poverty Level (FPL) and present symptoms of having breast or cervical cancer, to be screened at no cost. Mobile mammography vans are one means of reducing barriers to preventive services.

Women's health in the Hispanic community is of particular concern. Women in this population are not getting their regular screenings, and therefore, are more likely to be diagnosed with late stage breast cancer. This is a population on which Nevada must focus prevention and screening efforts in coming years to decrease the disparate effects of the disease.

Furthermore, Nevada needs to improve its full series HPV vaccination amongst adolescent females and males from the current 27 percent for girls and seven percent for boys to at or above the national average of 38 percent for girls and 14 percent for boys.<sup>79</sup> HPV vaccine protects against HPV strains 16 and 18, which are responsible for 70 percent of cervical cancers, and also reduces the risk of developing throat, mouth and anal cancers.<sup>80</sup> Improving HPV

vaccination rates will lessen the burden of cervical cancer in the future. This is an important area of focus for Nevada and aligns with the State Cancer Plan goals and objectives as well.

### INCREASED PLANNING AND INVESTMENT

It remains critical to integrate breast and cervical cancer prevention into larger coordinated cancer control initiatives and to mobilize federal, state and community level resources around a national strategy for preventing the diseases. Stakeholder-driven cancer plans, anchored in evidence-based strategies and models and evaluated to ensure a high return on investment, will advance health outcomes for Nevadans and ensure that limited resources are maximized.

As state cancer registries, like the NCCR, report on the burden of cancer, and electronic health records provide more robust data, the case for prevention is clear. Increased investment in prevention programs is necessary to reduce the negative impact on public health systems and lives. Efforts to decrease the burden of disease on disproportionately impacted populations must be increased.

### BREAST AND CERVICAL CANCER NEEDS ASSESSMENT

In order to better understand the needs of underserved populations, a needs assessment of high incidence, mortality, and late-stage breast and cervical cancer diagnoses needs to be conducted in Nevada counties. A needs assessment will address gaps in services, quality of services, existence of wait lists, length of time to diagnosis and the number of screening providers and screening dates per population. In addition, the needs assessment should focus on why women are not getting screened, what affordable treatment options are available after diagnosis and what barriers exist to accessing care.

### NEVADA CENTRAL CANCER REGISTRY (NCCR)

NCCR collects and maintains a record of reportable cases of cancer in the state. The data is used to evaluate the appropriateness of measures for the prevention and control of cancer and to conduct comprehensive epidemiological surveys of cancer and cancer-related deaths. Cancer case data is collected from hospitals, medical laboratories and other freestanding facilities, and from physicians that provide screening, diagnostic or therapeutic services to patients with respect to cancer. The information on these cases of cancer is reported to NCCR.

### THE 2016-2020 NEVADA COMPREHENSIVE CANCER CONTROL PLAN

*The 2016-2020 Nevada Comprehensive Cancer Control Plan* provides a roadmap focused on improving the systems and policies to prevent disease, improve the care of our loved ones, and ultimately save lives. The plan builds upon the 2011-2015 Plan which was focused on building infrastructure with an emphasis on creating partnerships and collaboration. Statewide work groups specific to breast cancer, skin cancer, research and data, education and policy have been

established as a result of the current plan. While not all 2011-2015 goals were achieved, substantial progress was made in several areas.

The 2016-2020 plan includes goals and objectives specifically pertaining to breast and cervical cancer: <sup>81</sup>

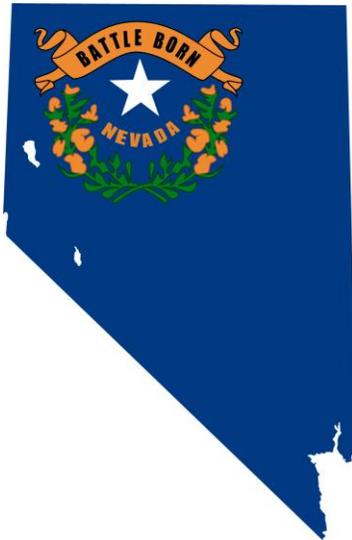
Figure 21: 2016-2020 Nevada Comprehensive Cancer Control Plan Breast and Cervical Cancer Goals and Objectives

Goal	Objectives
<p><b>Goal 1.1: Increase the number of 13-17-year-old children who have completed the 3-dose HPV vaccination series from 27 percent for girls and 7 percent for boys to at or above the national averages of 38 percent for girls and 14 percent for boys.</b></p>	<ul style="list-style-type: none"> <li>• Increase the number of eligible Nevada Vaccines for Children provider offices that will receive AFIX (Assessment, Feedback, Incentives, Exchange) visits and/or training necessary to decrease missed clinical opportunities for HPV vaccination through the use of electronic health records (EHRs) and Nevada WebIZ from 44 to 54.</li> <li>• Increase the number of continuing education opportunities for credit enhancing provider knowledge on the HPV vaccination series and patient compliance from 4 to 9.</li> <li>• Increase the number of campaigns promoting HPV vaccination from 1 to 5.</li> </ul>
<p>Goal 2.1: Decrease the percentage of late-stage breast cancer diagnoses among women from 37.5 percent to 35.6 percent.</p>	<ul style="list-style-type: none"> <li>• Increase the prevalence of women 40 and older who report having had a mammogram and a clinical breast exam within the prior two years from 69.9 percent to 73.4 percent.</li> </ul>
<p>Goal 2.2: Increase the overall percentage of women 18 years and older who have had a Pap test within the last three years from 78 percent to 81.9 percent.</p>	<ul style="list-style-type: none"> <li>• Increase the number of community health clinics using reminder-recall systems for cervical cancer screening from 1 to 5.</li> <li>• Increase the number of campaigns promoting cervical cancer screening from 0 to 2.</li> </ul>
<p>Goal 3.1: Increase the number of pathways for enrollment in Medicaid for eligible women needing treatment for breast or cervical cancer from 1 to 5.</p>	<ul style="list-style-type: none"> <li>• Increase the number of policy changes from 0 to 1 allowing women of any age under 250 percent of the Federal Poverty Level (FPL) access to treatment through Medicaid after a breast or cervical cancer diagnosis from any provider.</li> </ul>

## WHAT YOU CAN DO

As part of a statewide Call to Action to fight against cancer in Nevada, *The 2016-2020 Nevada Comprehensive Cancer Control Plan* outlines roles for citizens and groups across the Silver State. Everyone has a role to play in fighting cancer in Nevada. Here is a list of what **you** can do to Fight Cancer in Nevada:

### If you are a Nevadan, you can:



- ✓ Quit smoking and avoid exposure to second hand smoke.
- ✓ Eat a healthy diet filled with fruits and vegetables.
- ✓ Be physically active.
- ✓ Get the recommended cancer preventive immunizations such as Hepatitis B and human papillomavirus (HPV).
- ✓ Avoid overexposure to sun and artificial tanning.
- ✓ Know what types of screening you should get, how often to get screened and where you can get screening.
- ✓ Consider enrolling in a clinical trial.
- ✓ Engage with the Nevada Cancer Coalition and other cancer support organizations.
- ✓ Help raise money to fight cancer in our state.
- ✓ Provide support to those living with and fighting cancer.

### If you are a Community or Faith-Based Organization, you can:



- ✓ Provide cancer prevention education and reach out to underserved communities.
- ✓ Promote cancer screenings and partner with screening agencies to increase access.
- ✓ Partner with the Nevada Cancer Coalition to increase resources to fight cancer in the state.
- ✓ Provide support to those living with and fighting cancer.

### If you are a School District or University, you can:



- ✓ Educate students about healthy lifestyle choices, including healthy diet, exercise, sun exposure, and tobacco prevention.
- ✓ Provide healthy foods in vending machines and on-site cafeterias.
- ✓ Encourage sun safety.
- ✓ Support those living with and fighting cancer.

### If you are an Employer, you can:



- ✓ Establish policies that provide workers a smoke-free environment.
- ✓ Offer healthy meals, snacks and foods on site.
- ✓ Incentivize physical activity and healthy living through workforce wellness programs.
- ✓ Provide cancer education materials on site that promote cancer screening.
- ✓ Provide health insurance to all employees.
- ✓ Support those living with and fighting cancer.

### If you are a Hospital, you can:



- ✓ Submit cancer incidence reports in a timely manner to the Nevada Central Cancer Registry (775) 684-3221.
- ✓ Collaborate with community providers to increase screening rates.

### If you are Physician or Health Insurance Agency, you can:



- ✓ Encourage patients to be screened according to the most current, best-practice guidelines.
- ✓ Implement a patient-centered cancer screening reminder system.
- ✓ Refer patients to smoking cessation supports.
- ✓ Complete cancer case reports and submit to the state registry in a timely manner.
- ✓ Encourage patients to participate in clinical trials.

### If you are an Elected Official or Policy Maker, you can:



- ✓ Make cancer prevention a policy priority through legislation and administrative change.
- ✓ Support adequate funding of comprehensive cancer control efforts.
- ✓ Participate in state comprehensive cancer control efforts to align systems and services and reduce service duplication and improve outcomes for all Nevadans.
- ✓ Support policies that reduce disparities in health care provision and improve access to care.

## WOMEN'S HEALTH CONNECTION CONTACT INFORMATION

*For more information on how you can help fight cancer in Nevada, contact the Women's Health Connection:*

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