

# Skin Cancer Profile

## Nevada – 2012



Office of Public Health Informatics and Epidemiology | Nevada Central Cancer Registry  
Bureau of Health Statistics, Planning, Epidemiology, and Response  
Nevada State Health Division  
Department of Health and Human Services

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## Purpose

This profile is designed to provide up-to-date data and information on skin cancer to the public, health care providers, and policy makers; and, to assist health professionals, volunteers, and staff of skin cancer prevention and control organizations, community groups, and others who work to reduce the burden of skin cancer throughout Nevada.

### **The goals of this profile include:**

- Providing accurate and up-to-date information about skin cancer in Nevada.
- Providing a foundation for effective and productive discussion and advocacy for skin cancer control.
- Providing a resource guide to readers.

### **This profile focuses on:**

- Prevention: helping the public understand the root causes of the disease and decrease the modifiable risk factors that may increase the chances of developing skin cancer.
- Education: raising awareness and providing education about skin cancer incidence, mortality, risk factors, and potential benefits of early detection.

This profile describes the burden of skin cancer in Nevada and includes the most recent numbers of new skin cancer cases and deaths (incidence and mortality rates) as well as stage of disease at time of diagnosis.

## Data Sources

These data are from the Nevada Central Cancer Registry (NCCR) and the Nevada Office of Vital Records.

- The NCCR is a population-based registry that maintains data on all cancer patients in Nevada. The NCCR receives data from hospitals, outpatient facilities, and pathology laboratories throughout the state. The NCCR collects data on all reportable cancers. In accordance with National Program of Cancer Registries (NPCR) and the North American Association of Central Cancer Registries (NAACCR) standards, the NCCR strives to achieve and maintain 95% complete case ascertainment within 24 months of diagnosis date. The data is compiled, aggregated, and submitted to federal agencies annually. Once submitted, NCCR data is reviewed by each diagnosis year for completeness, accuracy, and timeliness.
- The Bureau of Health Statistics, Planning, Epidemiology, and Response oversees the Office of Vital Records, which collects, processes, analyzes, and maintains the birth and death records for Nevada.

## Technical Notes

Crude rates shown in this report are calculated per 100,000 population.

Age-adjusted rates shown in this report are adjusted to the 2000 U.S. standard population and are per 100,000 population.

Interim 2009 population estimates were used to calculate rates in this report. Interim 2009 population estimates are based on the 2005 population and 2009 county population estimates, provided by the Nevada State Demographer. Interim 2009 population estimates were updated in April 2011 by the Nevada State Health Division, Bureau of Health Statistics, Planning, Epidemiology, and Response.

Funeral directors, or persons acting as such, are legally responsible for filing death certificates. Mortality data in this report include only Nevada residents. This report contains demographic data of the individual and cancer-related cause of death (identified by International Classification of Disease (ICD-O) codes).

Due to changes in methodology, rates for subgroups published in this report may not match or be directly comparable to other reports and should be used with caution when compared to other published rates.

This profile includes invasive cases only.

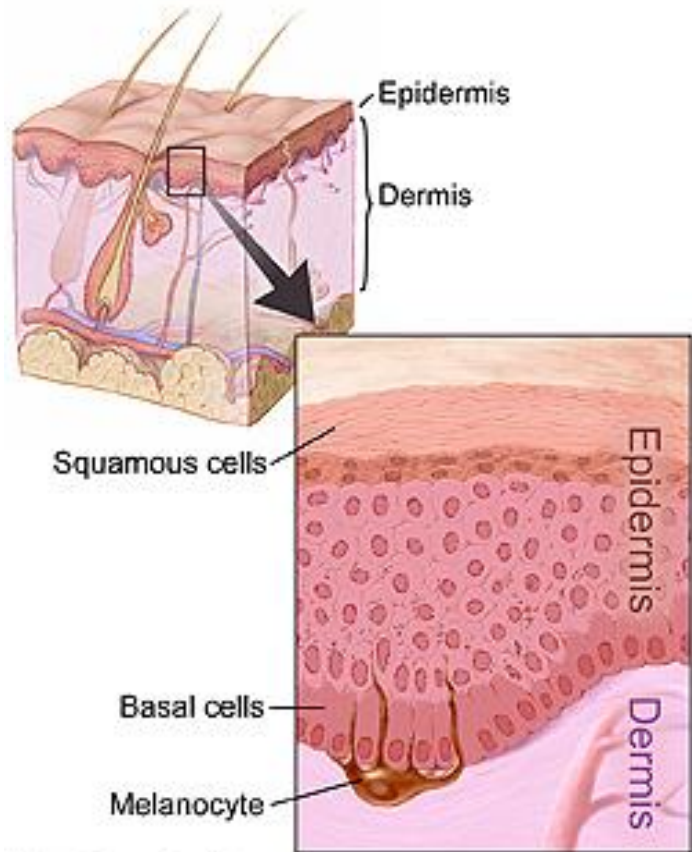
Cancer staging in this report uses the Derived Surveillance, Epidemiology, and End Results (SEER) Summary Stage 2000, which is derived from the Collaborative Staging (CS) algorithm, effective with 2004 diagnosis. The Collaborative Stage Data Collection System was designated by a joint task force to provide a single uniform set of codes and rules for coding extent of disease and stage information to meet the needs of all the participating standard setters. When CS data items are coded, a computer algorithm provides the derivation of T, N, M, and stage-based on American Joint Committee on Cancer (AJCC) Cancer Staging Manual 6<sup>th</sup> and 7<sup>th</sup> editions, SEER Summary Stage 1977, and SEER Summary Stage 2000.

Cancer cases can be ‘unstaged,’ meaning that the stage of cancer has not been reported at time of diagnosis. According to the Collaborative Stage Data Collection System, staging can be based on “all information through completion of surgery(ies) in the first course of treatment or all information available within four months of the date of diagnosis in the absence of disease progression, whichever is longer.” In addition, a patient may refuse further work-up, treatment, surgery, etc, which could hinder staging.

“All other counties” includes Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, and White Pine.

## Anatomy of the Skin

Skin is the largest organ of the body; it covers the entire external surface of the human body and is the principal site of interaction with the surrounding world. It serves as a protective barrier that prevents internal tissues from exposure to trauma, ultraviolet (UV) radiation, temperature extremes, toxins, and bacteria. Other important functions include sensory perception, immunologic surveillance, thermoregulation, and control of insensible fluid loss. Skin is a type of epithelial tissue that is comprised of layers of cells. The outermost layer is composed of squamous cells on a base layer referred to as the basal lamina or basement membrane. Skin tissues are avascular, meaning the cells are not nourished by an active blood supply and are reliant on the connective tissues for nutrients through absorption.



National Cancer Institute

Melanocytes, which are the melanin-producing cells that regulate pigmentation of the skin, are located in the lower layers of the skin and in close proximity to the connective tissues.

## Skin Cancer

Skin cancer is the most common form of cancer in the United States.<sup>1</sup> The two most common types of skin cancer, basal cell and squamous cell carcinomas, are highly curable.<sup>1</sup> However, melanoma, the third most common skin cancer, is more dangerous.<sup>1</sup>

About 65-90% of melanomas are caused by exposure to UV light.<sup>2</sup> According to the American Dermatological Association (ADA), one in 20 Americans will be diagnosed with some level of skin cancer in their lives. The ADA further states that every hour in America a person dies from melanoma. In Nevada, with over 250 days of sunshine each year, the stakes can be much higher.

UV rays are an invisible kind of radiation that comes from the sun, tanning beds, and sunlamps that can penetrate and change skin cells. Too much exposure to UV rays can change skin texture, cause skin to age prematurely, and lead to skin cancer.<sup>1</sup>

There are three types of UV rays – ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC).

- UVA is the most common kind of sunlight at the earth's surface, and reaches beyond the top layer of human skin. UVA rays can damage connective tissue and increase a person's risk of skin cancer.<sup>1</sup>
- Most UVB rays are absorbed by the ozone layer, so they are less common to the earth's surface than UVA rays. UVB rays don't reach as far into the skin as UVA rays, but they can still be damaging.<sup>1</sup>
- UVC rays are very dangerous, but they are absorbed by the ozone layers and don't reach the ground.<sup>1</sup>

## Risk Factors and Clinical Manifestations

People with certain risk factors are more likely than others to develop skin cancer. Risk factors vary for different types of skin cancer, but some general **non-modifiable risk factors** for developing skin cancer include:

- A lighter natural skin color
- A family history of skin cancer
- A personal history of skin cancer
- Skin that burns, freckles, reddens easily, or becomes painful in the sun
- Blue or green eyes
- Blonde or red hair
- Certain types and a large number of moles<sup>1</sup>

**Modifiable risk factors** for skin cancer include behaviors and lifestyles that may contribute to increasing the risk of developing skin cancer such as:

- Exposure to the sun through work and play
- Lack of using appropriate sunscreen products
- A history of indoor tanning
- A history of sunburns early in life<sup>1</sup>



## Prevention

Protection from UV radiation is important all year round, not just in the summer. UV rays can penetrate the skin on cloudy as well as sunny days. Indoor tanning also exposes users to UV radiation. The Centers for Disease Control and Prevention (CDC) recommends easy options for protecting against UV radiation:

- Seek shade, especially during mid-day hours
- Wear clothing to protect exposed skin
- Wear a hat with a wide brim to shade the face, head, ears, and neck
- Wear sunglasses that wrap around and block as close to 100% of both UVA and UVB rays as possible from your eyes
- Use sunscreen with sun protective factor (SPF) 15 or higher, and both UVA and UVB protection
- Avoid indoor tanning<sup>1</sup>

Indoor tanning exposes users to both UVA and UVB rays, and has been linked with melanoma (the deadliest type of skin cancer), squamous cell carcinoma, and cancers of the eye (ocular melanoma). Indoor tanning is especially dangerous for young users; people who begin tanning younger than 35 have a 75% higher risk of melanoma.<sup>3</sup>

## Skin Cancer in Nevada

Because noninvasive basal and squamous cell carcinomas of the skin are slow growing and rarely metastasize, they can be successfully controlled and are not required by law to be reported to Nevada's central cancer registry. However, squamous cell carcinoma can become invasive and can grow quickly and metastasize. In 2009, only 25 new cases of invasive squamous cell carcinoma and no new cases of invasive basal cell carcinoma were reported to the cancer registry. Due to these low numbers, this profile will primarily focus on invasive melanomas of the skin.

In 2009, there were 422 newly diagnosed invasive cases and 73 deaths due to melanomas in Nevada. Over 95% of the new cases and 96% of the mortalities were among non-Hispanic whites.

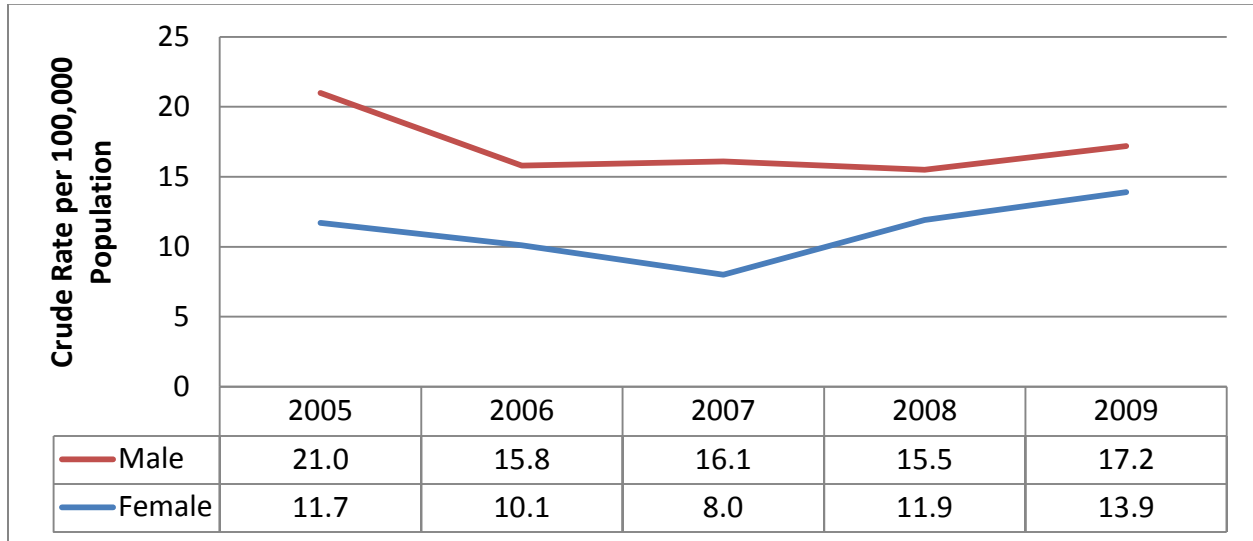
The crude invasive melanoma incidence rate was 15.6 per 100,000 Nevada residents in 2009. This rate was not significantly different than that observed five years ago. However, there was a significant decrease in the melanoma incidence rate between 2005 and 2007, followed by a significant increase between 2007 and 2009.

The crude melanoma mortality rate was 2.7 per 100,000 Nevada residents in 2009 and had not shown a significant increase or decrease in the past five years.

## A Closer Look at Sex

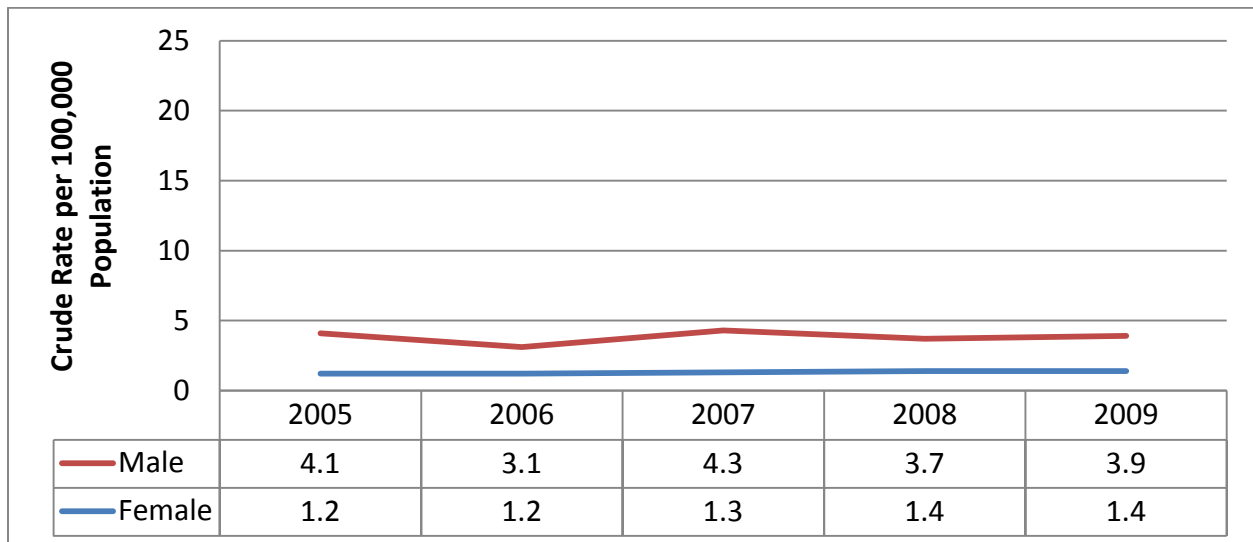
Nevada's most recent crude incidence rates show that there are more new cases of invasive melanoma among males. Statistically significant sex-related differences were observed in Nevada for 2005 through 2007.

**Crude Melanoma Incidence Rates by Sex, Nevada Residents, 2005-2009**



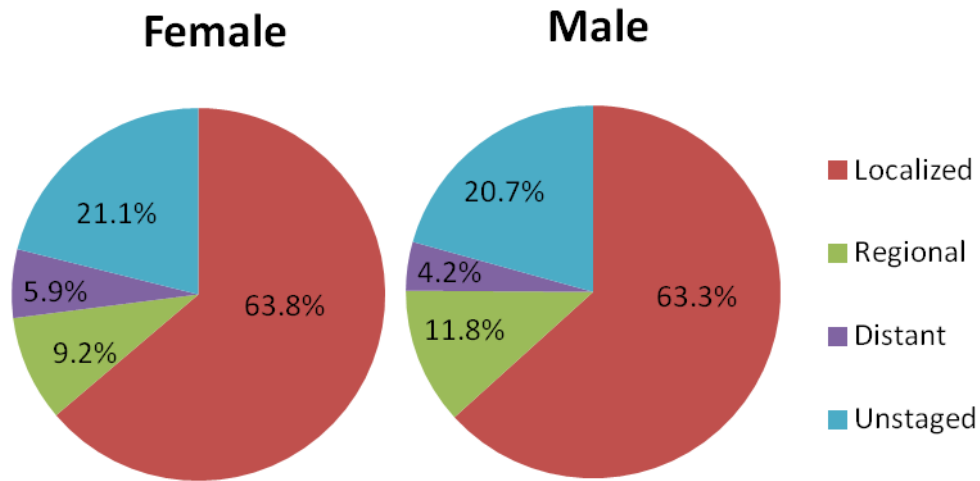
From 2005 to 2009, there were no significant changes in the melanoma mortality rates among either sex. There are significantly more melanoma-related deaths each year in Nevada among males than among females.

**Crude Melanoma Mortality Rates by Sex, Nevada Residents, 2005-2009**



Analyzing the stage of cancer at time of diagnosis among newly diagnosed invasive melanoma cases in 2009 revealed no statistically significant sex-related differences in the distribution of stages. A relatively high proportion of melanomas were diagnosed as localized among both sexes in 2009, at 63.8% and 63.3% for females and males respectively.

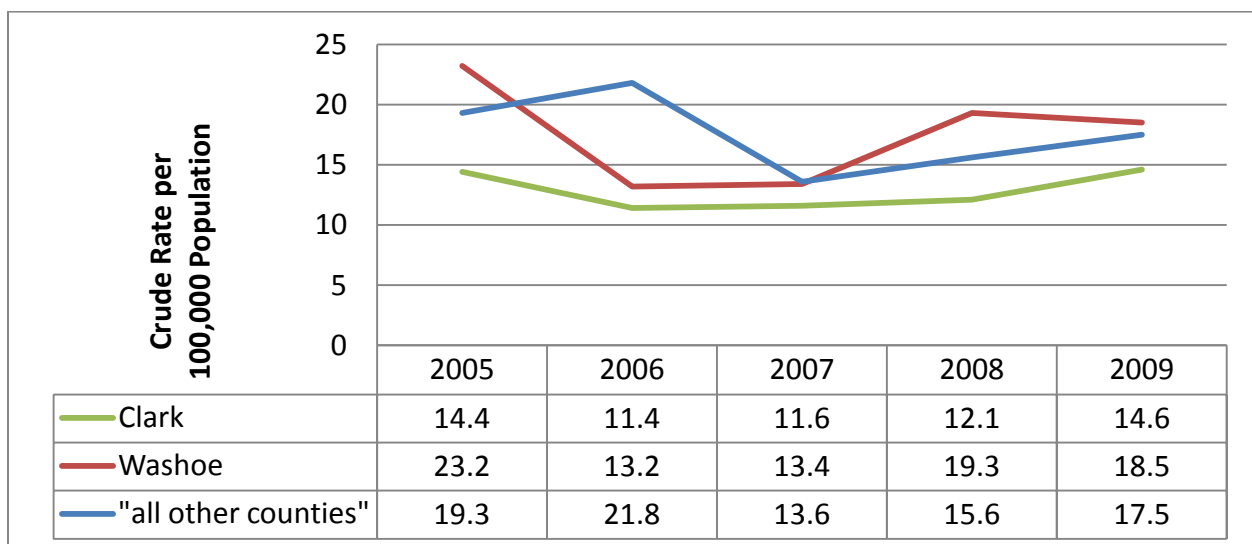
**Proportion of Melanoma, by Stage at Diagnosis, by Sex, Nevada Residents, 2009**



**A Closer Look at Region**

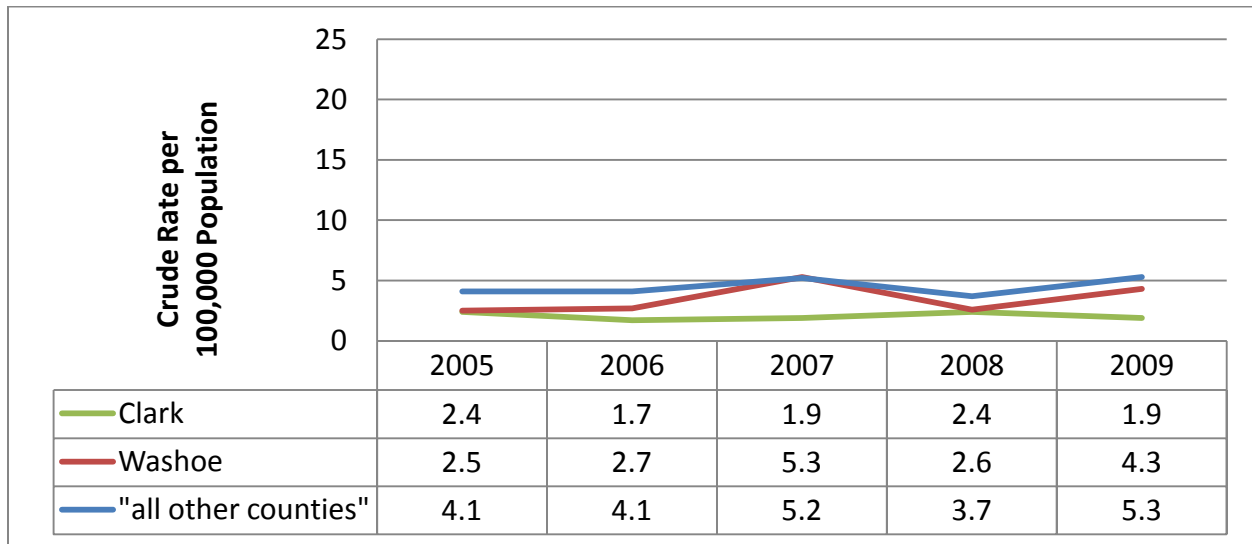
Overall, no significant changes in invasive melanoma incidence occurred in any one region from 2005 to 2009. Although Washoe and “all other counties” showed slightly higher crude melanoma incidence rates than Clark in 2009, we cannot conclude from the current data that this difference was significant.

**Crude Melanoma Incidence Rates by Region, Nevada Residents, 2005-2009**





### Crude Melanoma Mortality Rates by Region, Nevada Residents, 2005-2009

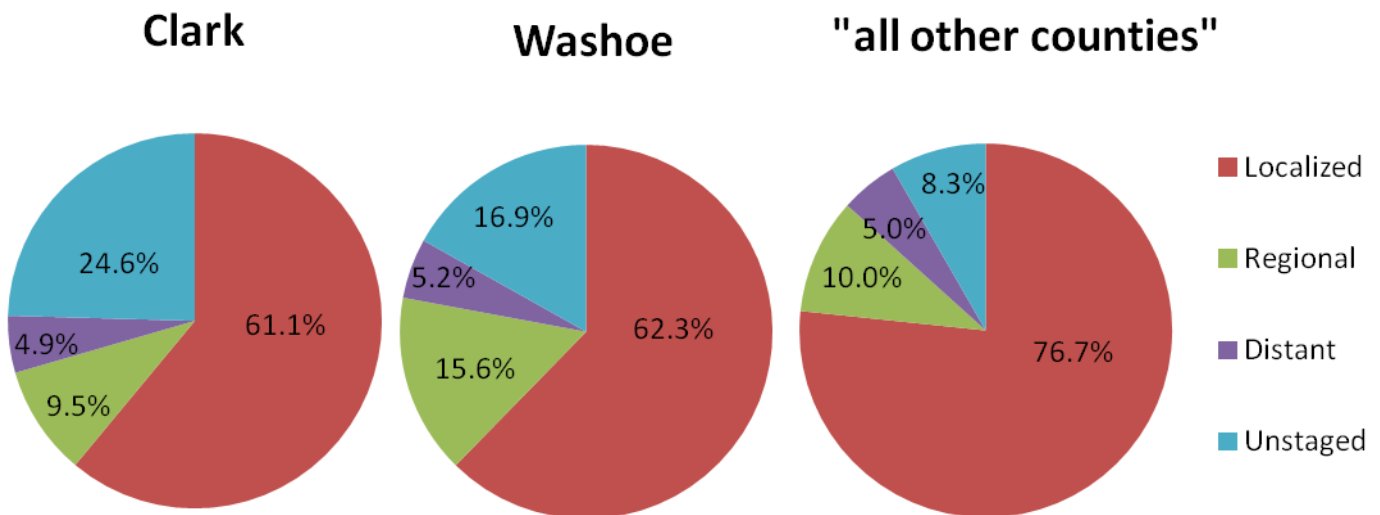


In 2009, Clark showed significantly lower crude melanoma mortality rates than Nevada’s rural and frontier counties. There was not a significant difference in mortality rates between Clark and Washoe or Washoe and “all other counties.” Furthermore, no significant changes in melanoma mortality rates occurred in any one region from 2005 to 2009.

Analyzing cancer stage at time of diagnosis among newly diagnosed invasive melanoma cases in 2009, we see a slightly higher proportion of new cases diagnosed as localized in Nevada’s rural and frontier populations. However, we cannot conclude from the current data that this difference is significant.

There were a significantly higher proportion of cases that were unstaged at time of diagnosis in Clark than in “all other counties” in 2009.

### Proportion of Melanoma, by Stage at Diagnosis, by Region, Nevada Residents, 2009



## What Is Nevada Doing?

***Cover Up, Nevada!*** is an outreach initiative focused on saving lives through skin cancer prevention. ***Cover Up, Nevada!*** was developed by Nevada State Senator Allison Copening, skin cancer advocates, and community organizations including the American Cancer Society Action Network, and is funded by grants from the Centers for Disease Control and Prevention (CDC) in cooperation with the Nevada State Health Division and the Nevada Cancer Coalition. The focus of the campaign is to encourage Nevada residents to “cover up” their skin by applying sunscreen daily, putting on a hat and sunglasses, and wearing protective clothing. ***Cover Up, Nevada!*** offers free community awareness events, skin cancer screenings, and skin cancer prevention materials.

The campaign launched on May 10, 2010 with a week of educational events throughout southern Nevada that featured a skin analyzer machine, skin cancer educational brochures, free sunscreen packets, and other free educational items focused on melanoma awareness. Going forward, ***Cover Up, Nevada!*** will focus on the second week of May, Melanoma and Skin Cancer Detection and Prevention Week in Nevada, for its outreach efforts as the summer months begin. This May, 2012, ***Cover Up Nevada!*** will be showing two new statewide public service announcements on skin cancer awareness.

The Nevada State Health Division is also conducting a statewide campaign to recognize the CDC’s national “Don’t Fry Day,” a program to promote skin cancer awareness month.

Nevada is also working towards limiting the use of tanning beds among our youth. While efforts were stalled during the 2011 Legislative Session to regulate tanning bed facilities by prohibiting youths under the age of 18 from indoor tanning, there is a movement underway by Nevada health policy advocates to bring a bill before committee during the 2013 legislative session that once again calls to restrict tanning bed usage by youths under the age of 18.

## Resources

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### **COVER UP, NEVADA!**

[www.coverupnevada.org](http://www.coverupnevada.org)

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Requests for additional information regarding this report can be made to:

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For more information on cancer in Nevada or if you are interested in becoming an advocate for cancer prevention please visit the Nevada Cancer Coalition's website at:

[www.nevadacancercoalition.org/](http://www.nevadacancercoalition.org/).

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1. Centers for Disease Control and Prevention (CDC). Skin Cancer. *Basic Information About Skin Cancer* [Internet]. [Accessed 2012 Apr 17]. Available from: [http://www.cdc.gov/cancer/skin/basic\\_info/](http://www.cdc.gov/cancer/skin/basic_info/)
2. Armstrong BK, Kricger A. [How much melanoma is caused by sun exposure?](#) *Melanoma Research* 1993; 3(6):395–401.
3. International Agency for Research on Cancer Working Group on Artificial Ultraviolet (UV) Light and Skin Cancer. [The association of use of sunbeds with cutaneous malignant melanoma and other skin cancers: A systematic review.](#) *International Journal of Cancer* 2007; 120(5):1116–1122.