

# **LISTERIOSIS**

## **IN NEVADA, 2003-2012**

April 2014  
Edition 1.4

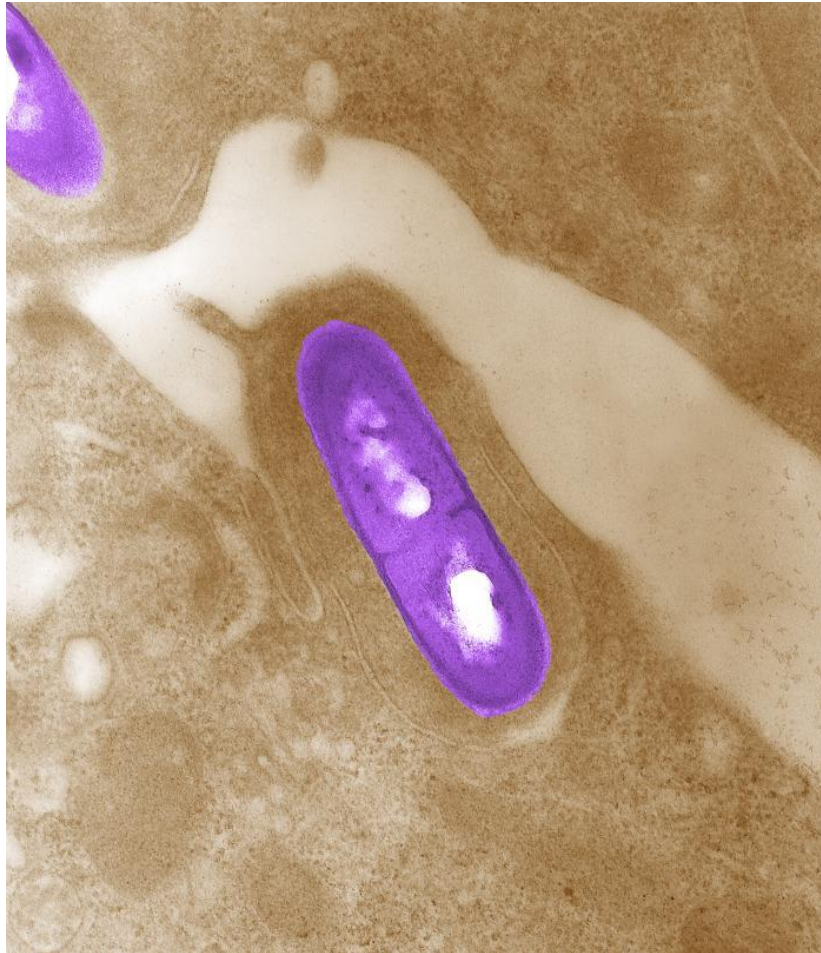


Photo: Centers for Disease Control and Prevention/  
Dr. Balasubr Swaminathan; Peggy Hayes



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## Purpose

The purpose of this report is to provide a general overview of the incidence and recent trends of listeriosis among Nevada residents. The report also includes Healthy People 2010 objectives, Healthy People 2020 objectives, and Nevada data collected from cases of listeriosis from 2003 to 2012. Listeriosis is listed as one of Nevada's reportable diseases pursuant to [NRS 441A](#) (1). Listeriosis reporting is further regulated by [NAC 441A.590](#) (2).

## Listeriosis

Listeriosis is an infection from the bacteria *Listeria monocytogenes*, which kills 1 in 5 people who become infected. The bacterium is most commonly found in water, soil, and animals and is transmitted via consumption of contaminated food or water. Foods that have been found to be contaminated with *L monocytogenes* include undercooked meats and vegetables, soft cheeses, hot dogs, deli meat, smoked seafood, and unpasteurized dairy products such as milk and cheese. Unlike most bacteria, *L monocytogenes* can easily multiply in low temperatures, such as the refrigerator, but can be killed by cooking (3).

Listeriosis disproportionately affects older adults, newborns, pregnant women, and those with weakened immune systems. Listeriosis is of major concern to pregnant women because an infection may cause miscarriage, premature delivery, stillbirth, or a life-threatening infection in the unborn baby. The Centers for Disease Control and Prevention (CDC) estimates that approximately 1,600 illnesses and 260 deaths due to listeriosis occur nationwide per year (3).

Symptoms of listeriosis may appear up to 2 months after being exposed, and patients may exhibit fever, muscle aches, headache, loss of balance, confusion, stiff neck, and convulsions. Many pregnant women only experience a mild illness similar to the flu but still have the potential to experience adverse effects on the unborn baby. For patients exhibiting symptoms of infection, diagnosis is confirmed after isolating *L monocytogenes* from blood or spinal fluid or from amniotic fluid for pregnant women. Most people who are diagnosed with listeriosis have an invasive infection, where the bacteria have spread from their intestines into their bloodstream and other vital systems. Infections that progress to meningitis or brain abscesses need to be treated by medical staff. Treatment for listeriosis is usually a course of specific antibiotics for a set length of time, depending on what body system is being affected (3).

To avoid becoming infected with the bacteria, the U.S. Food and Drug Administration (FDA) recommends always practicing safe food handling techniques, including washing raw vegetables, cooking food thoroughly, cooking meat to an internal temperature of at least 165°F, washing hands before and after cooking or eating food, and avoiding consuming any unpasteurized food products. Pregnant women should take extra precautions and completely avoid any soft, unpasteurized cheeses throughout their entire pregnancy. Pregnant women should also avoid processed meats like hot dogs and deli meat while pregnant (3).

## Summary

From 2003 to 2012, the annual number of reported listeriosis cases in Nevada ranged from a low of 1 case in 2008, 2010, and 2012 to a high of 9 cases in 2006. Over the ten years, a total of 42 cases were reported. The annual crude incidence of listeriosis ranged from a low of 0.2 cases per 100,000 population in 2011 to a high of 0.4 cases per 100,000 population in 2006, but this difference was not statistically significant; the incidence rates for 2003, 2005, 2008, 2009, 2010, and 2012 were not calculated due to low case counts. The crude incidence rate from 2003 to 2012 was 0.2 cases per 100,000 population.

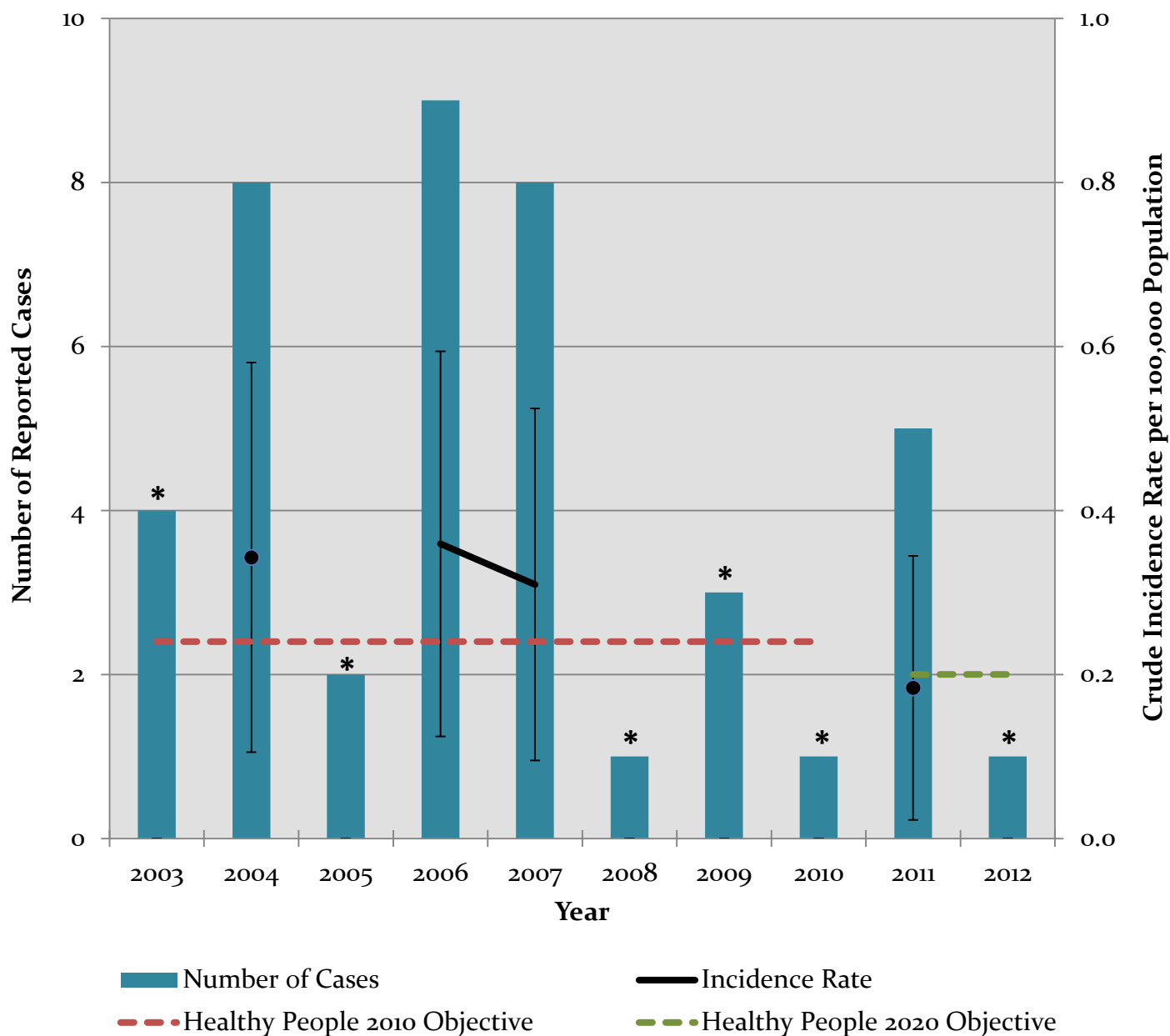
From 2003 to 2010, Nevada had sufficient case counts to calculate crude incidence rates for 2004, 2006, and 2007. These 3 years showed no statistically significant differences compared to the Healthy People 2010 objective for listeriosis (objective: not to exceed an incidence rate of 0.24 laboratory confirmed cases per 100,00 population) (4). In 2011, Nevada's crude incidence rate of laboratory confirmed listeriosis also had no significant difference than the Healthy People 2020 objective (objective: not to exceed an incidence rate of 0.2 laboratory confirmed cases per 100,000 population) (5), and the rate for 2012 was not calculated due to low case counts.

From 2003 to 2012, there were no significant differences in age-adjusted incidence rates between health districts and the overall state rate. The rate for Carson City Health and Human Services was not calculated due to low case counts.

Like most foodborne illnesses, listeriosis cases typically increase during the summer and decline in fall and winter. However, between 2008 and 2012 (years for which monthly data is available), the annual case counts are so few that no monthly or seasonal trend for reported listeriosis cases is discernible.

Listeriosis disproportionately affects newborns, older adults, and pregnant women (3), but there were no reported cases for infants under 1 year of age from 2005 to 2012 and for children 1-4 years of age from 2003 to 2012. From 2003 to 2012, only 1 case of listeriosis was reported in the childbearing population (ages 15-39). During this same time period, persons over the age of 65 years had the largest number of cases with a total of 27 reported cases. Annual incidence rates for age groups were not calculated due to low case counts.

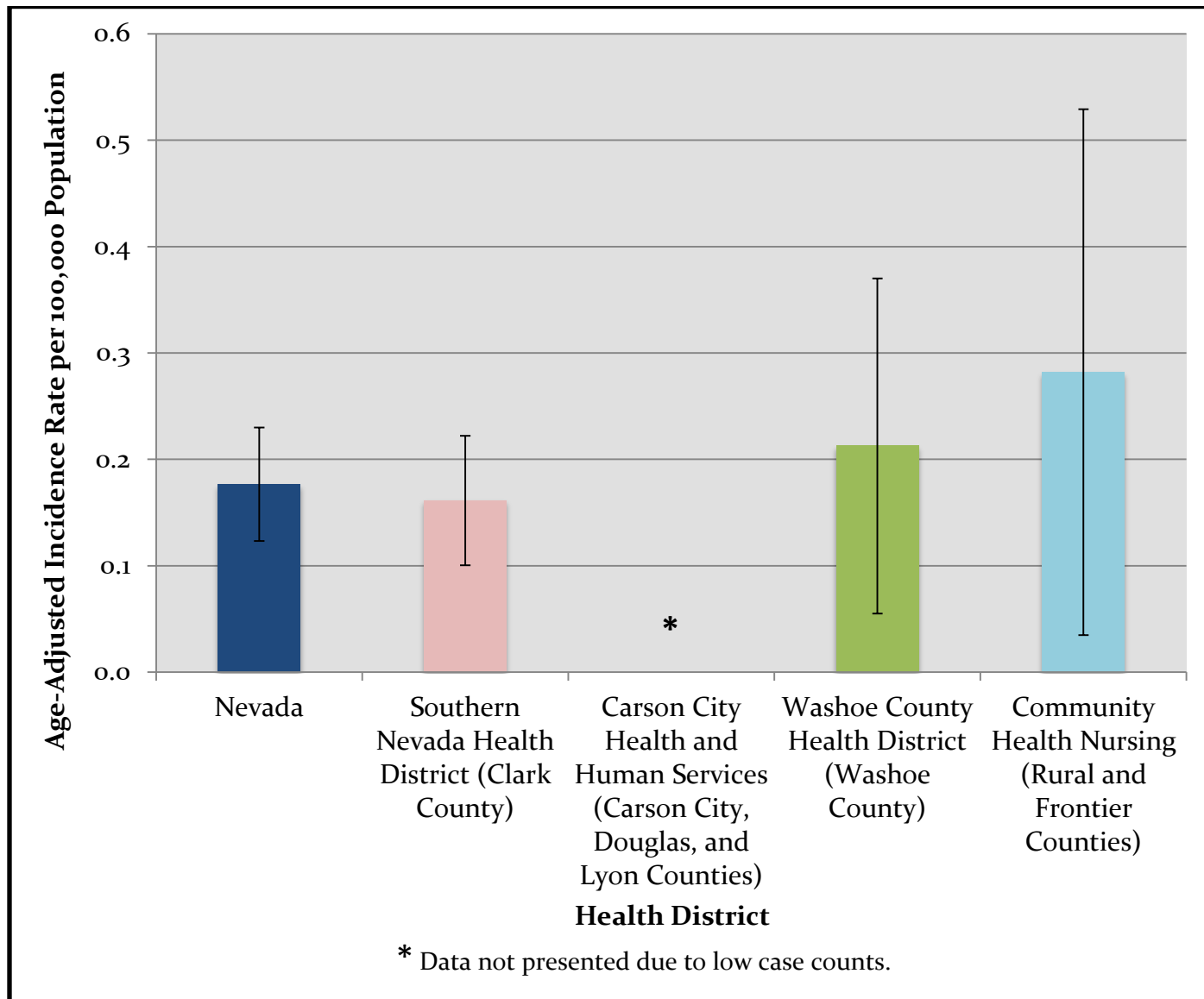
# Figure 1. Number of Reported Cases and Crude Incidence Rates of Laboratory Confirmed Listeriosis in Nevada Compared to Healthy People Objectives: 2003-2012



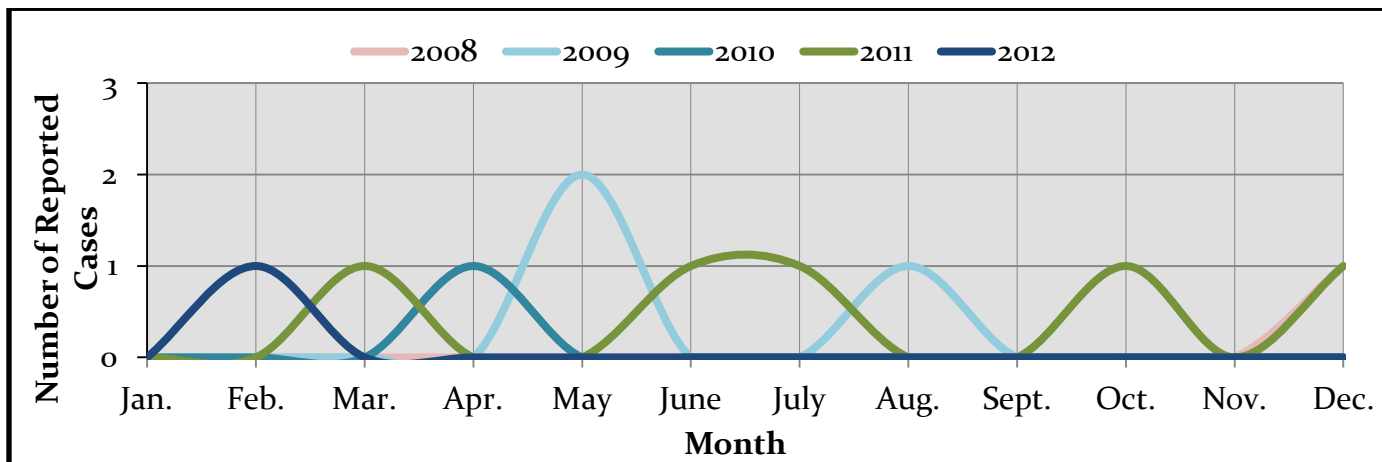
\* Incidence rate not presented due to low case counts.

The crude incidence rate in Nevada from 2003 to 2012 was 0.2 cases per 100,000 population.

### Figure 2. Age-Adjusted Incidence Rates of Listeriosis in Nevada and Nevada Health Districts: 2003-2012



### Figure 3. Number of Listeriosis Cases Reported in Nevada by Month: 2008-2012



# Figures 4A-G. Number of Listeriosis Cases Reported in Nevada by Age Group: 2003-2012

Figure 4A. Listeriosis Cases in Infants Under 1 Year of Age

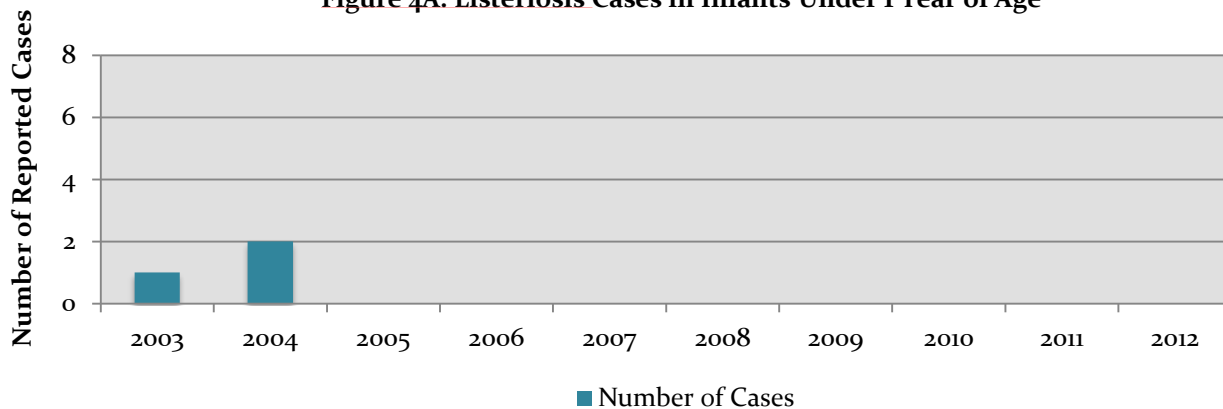


Figure 4B. Listeriosis Cases in Children 1-4 Years of Age

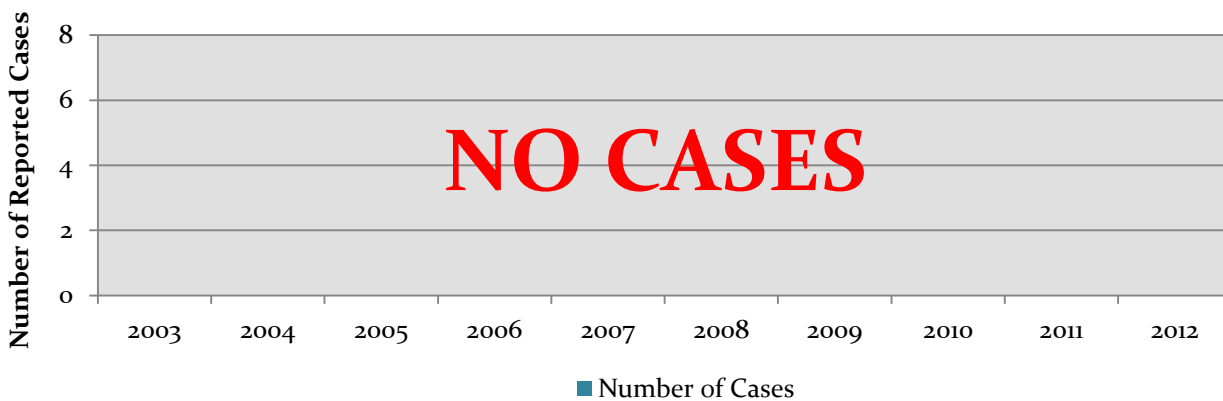


Figure 4C. Listeriosis Cases in Persons 5-14 Years of Age

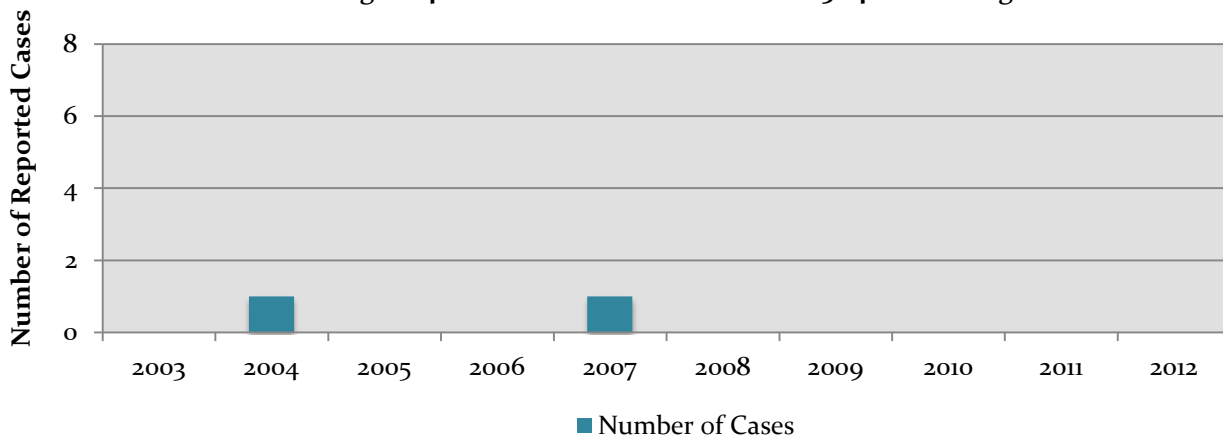


Figure 4D. Listeriosis Cases in Persons 15-24 Years of Age

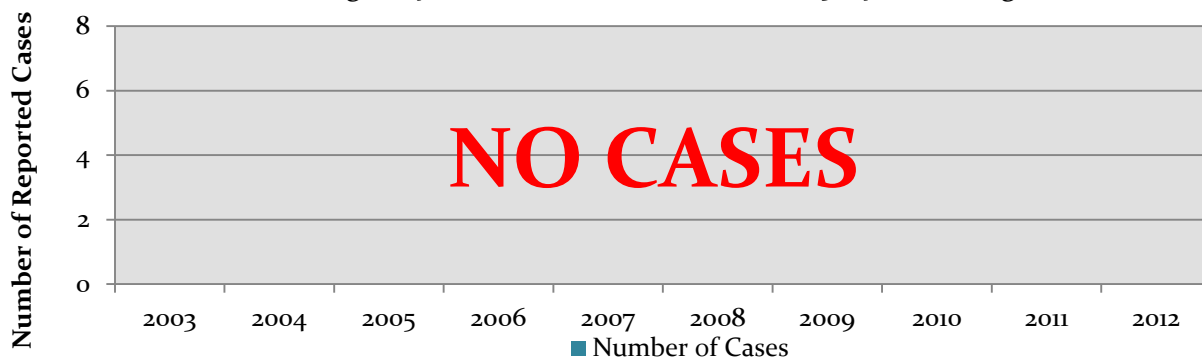


Figure 4E. Listeriosis Cases in Persons 25-39 Years of Age

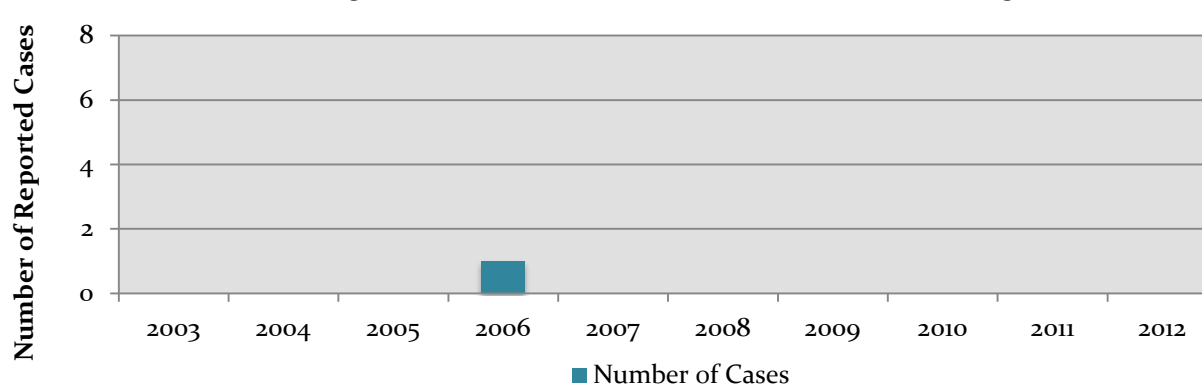


Figure 4F. Listeriosis Cases in Persons 40-64 Years of Age

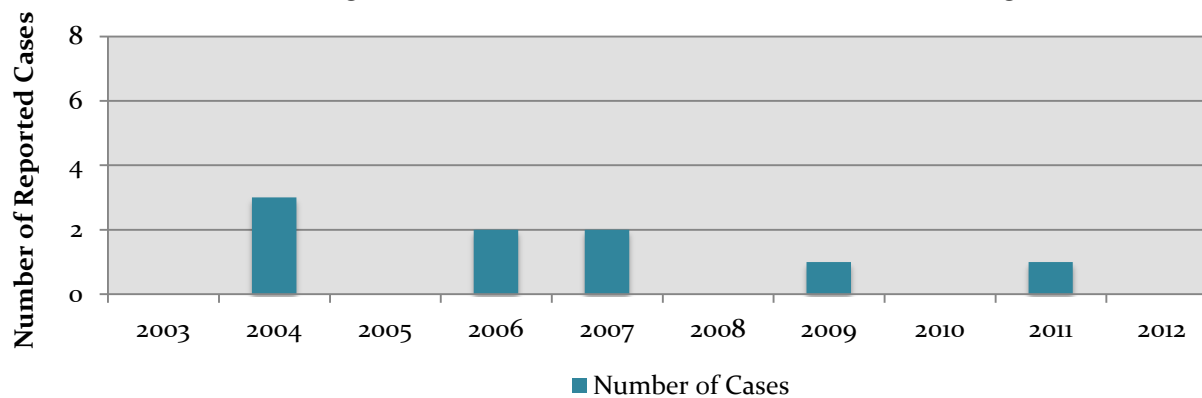
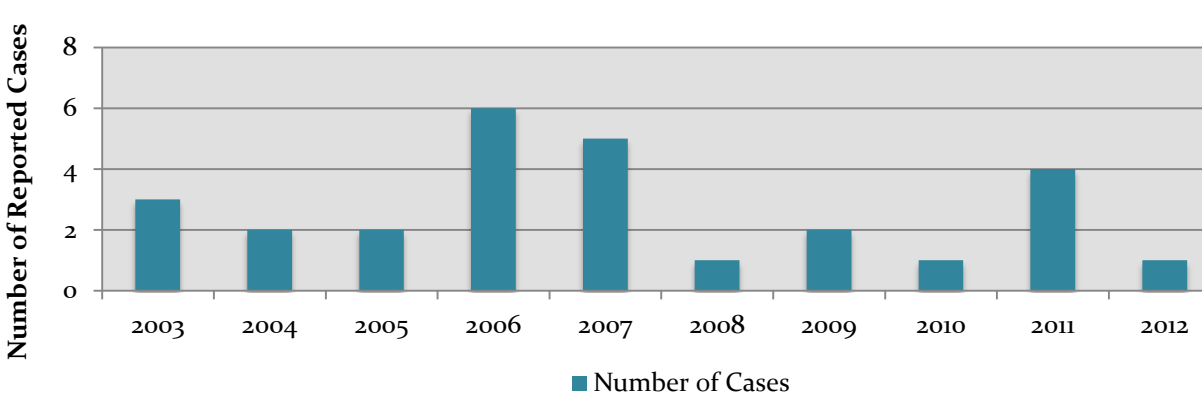


Figure 4G. Listeriosis Cases in Persons 65+ Years of Age



## Technical Notes

All Nevada data from 2003 to 2012 came from reported *Listeria* infections among Nevada residents (6, 7). The CDC and the Council of State and Territorial Epidemiologists case definition of listeriosis encompasses all cases classified as confirmed; all cases of listeriosis used for this report follow this definition (8). Population estimates were obtained from Nevada State Demographer's Office (9). Age-adjusted rates per 100,000 population were calculated using the 2000 U.S. standard population. Sufficient case counts were not available to obtain age-adjusted incidence rates for racial/ethnic groups; therefore, racial/ethnic distributions of incidence are not presented in this report. When used for rates, error bars represent 95% confidence intervals. The Keyfitz method was used to calculate confidence intervals of age-adjusted rates (10). Due to their inherent unreliability, rates were not calculated for case counts lower than five.

## Sources

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## Recommended Citation

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