

ACUTE HEPATITIS B IN NEVADA, 2005-2014

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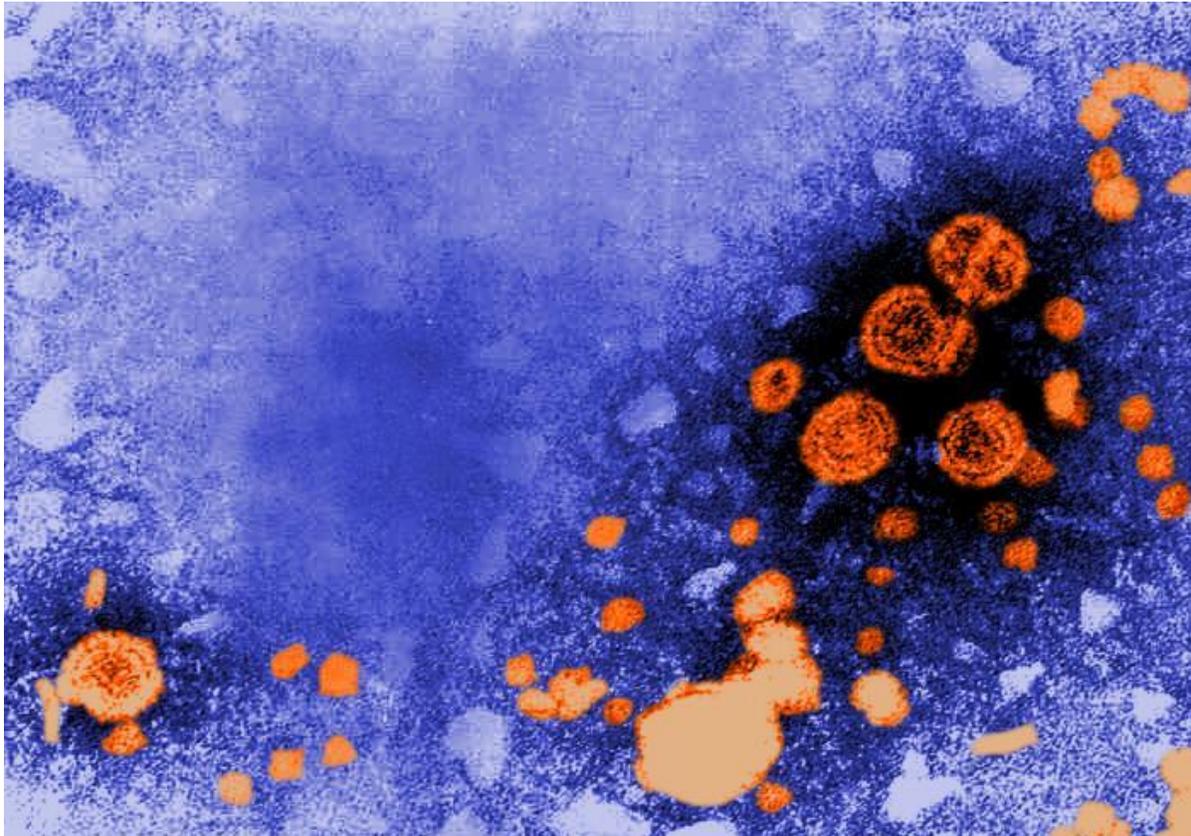


Photo: [Centers for Disease Control and Prevention](#)/ Dr. Erskine Palmer



DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC AND BEHAVIORAL HEALTH
Office of Public Health Informatics and Epidemiology

BRIAN SANDOVAL
Governor

CODY L. PHINNEY, MPH
Administrator

RICHARD WHITLEY, MS
Director

LEON RAVIN, MD
Acting Chief Medical Officer

Purpose

The purpose of this report is to provide a general overview of the incidence and recent trends of acute hepatitis B among Nevada residents. The report also includes Healthy People 2010 objectives, Healthy People 2020 objectives, and Nevada data collected from cases of acute hepatitis B from 2005 to 2014. Hepatitis B is listed as one of Nevada's reportable diseases pursuant to [NRS 441A](#) (1). Hepatitis B reporting is further regulated by [NAC 441A.570](#) (2).

Hepatitis B

Hepatitis B is a liver disease caused by the hepatitis B virus. Hepatitis B may present as an acute, short-term, or chronic, long-term, infection. The data presented in this report are only for cases of acute hepatitis B because generally only acute cases of hepatitis B are reported to the Division of Public and Behavioral Health from all health districts. There was an estimated 19,764 new hepatitis B infections in 2007. The number of reported infections is believed to be much lower than the number of actual infections because many people do not have symptoms or are unaware they are infected (3).

Hepatitis B is spread through bodily fluids such as blood or semen. People may become infected when being born; by having sex with an infected partner; by sharing needles, syringes, or other drug-injection equipment; by sharing razors or toothbrushes with an infected person; through direct contact with the blood or open sores of an infected person; and by being exposed to blood from needle sticks or other sharp instruments (3).

Acute hepatitis B infections do not always cause symptoms; this is especially true for young children. Adults and children over 5 years old are more likely to have symptoms, and 70 percent of adults develop symptoms. If symptoms do appear in acute hepatitis B, they include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored bowel movements, joint pain, and jaundice. Symptoms can appear between 6 weeks and 6 months after exposure, though on average, they appear 90 days after exposure. Typically, symptoms last a few weeks, but they may last as long as 6 months (3).

When the virus remains in a person's body, acute hepatitis B can lead to a chronic infection. The chance of developing chronic hepatitis B is higher the younger an individual is; 90% of infected infants, 25-50% of infected children, and 6-10% of persons infected over 5 years of age will develop chronic hepatitis B. Most people with chronic hepatitis B infection are symptom-free for 20 to 30 years. Of those with chronic hepatitis B, 15-25% will develop serious liver conditions, such as cirrhosis or liver cancer. Symptoms may still not be present even as the liver becomes diseased. Approximately 2,000 to 4,000 people in the United States die every year from liver disease related to hepatitis B (3).

Hepatitis B is diagnosed by collecting blood samples for laboratory testing. Adequate rest, nutrition, and fluids are typically recommended as treatment for acute hepatitis B infection. The treatment of chronic hepatitis B varies for each patient, though it typically includes regular monitoring for signs of liver disease. Medications are available for treatment, but not every person infected with chronic hepatitis B requires medication. The Centers for Disease Control and Prevention (CDC) recommends people with chronic hepatitis B avoid alcohol because it may cause additional liver damage. CDC also recommends consulting with a health care provider before taking prescription pills, supplements, or over-the-counter medications (3).

The best protection against hepatitis B is the hepatitis B vaccine. The hepatitis B vaccine is given in 3 to 4 shots, typically administered over 6 months. The vaccine has been shown to provide greater than 90 percent protection against the virus and is likely responsible for the drastic decline in hepatitis B infections in the United States; rates of hepatitis B infection in the United States have dropped by about 82% since 1991. This vaccination is recommended for all infants (starting with the first dose at birth), all unvaccinated children and adolescents younger than 19 years of age, and any adult at higher risk of infection (3).

Summary

From 2005 to 2014, the annual number of reported acute hepatitis B cases ranged from a low of 21 cases in 2014 to a high of 49 cases in 2007. Over the ten years, a total of 364 cases were reported. The crude incidence rate of acute hepatitis B showed a steady decline, from a high of 2.0 cases per 100,000 population in 2005 to a low of 0.7 cases per 100,000 population in 2014. Though statistically significant changes are not seen year-to-year, the crude incidence rate for 2014 was significantly lower than the rates from 2005-2008. The decrease in incidence is largely attributed to increased vaccination rates (3). The crude incidence rate of acute hepatitis B from 2005 to 2014 was 1.4 cases per 100,000 population.

Healthy People 2010 objectives for acute hepatitis B were set for specific age groups. In 2006 and 2007, the incidence rate for adults aged 19 to 24 years was neither statistically significantly higher nor lower than the objective (objective: 1.8 cases per 100,000 population) (4). Rates for 2005, 2008, 2009, and 2010 were not calculated due to low case counts; therefore this data is not presented graphically. From 2005 to 2010, the incidence rate of acute hepatitis B cases in adults aged 25 to 39 years ranged from 2.1 to 4.2 cases per 100,000 population; the rates for 2006, 2007, 2009, and 2010 were significantly lower than the Healthy People 2010 objective (objective: 5.2 cases per 100,000 population) (4). The other years showed no significant difference with this objective. From 2005 to 2010, the incidence rate of acute Hepatitis B cases in adults age 40 years and older ranged from 1.7 to 2.7 cases per 100,000 population; the rates from 2006 to 2010 were significantly lower than the Healthy People 2010 objective (objective: 3.7 cases per 100,000 population) (4). There was no significant difference 2005.

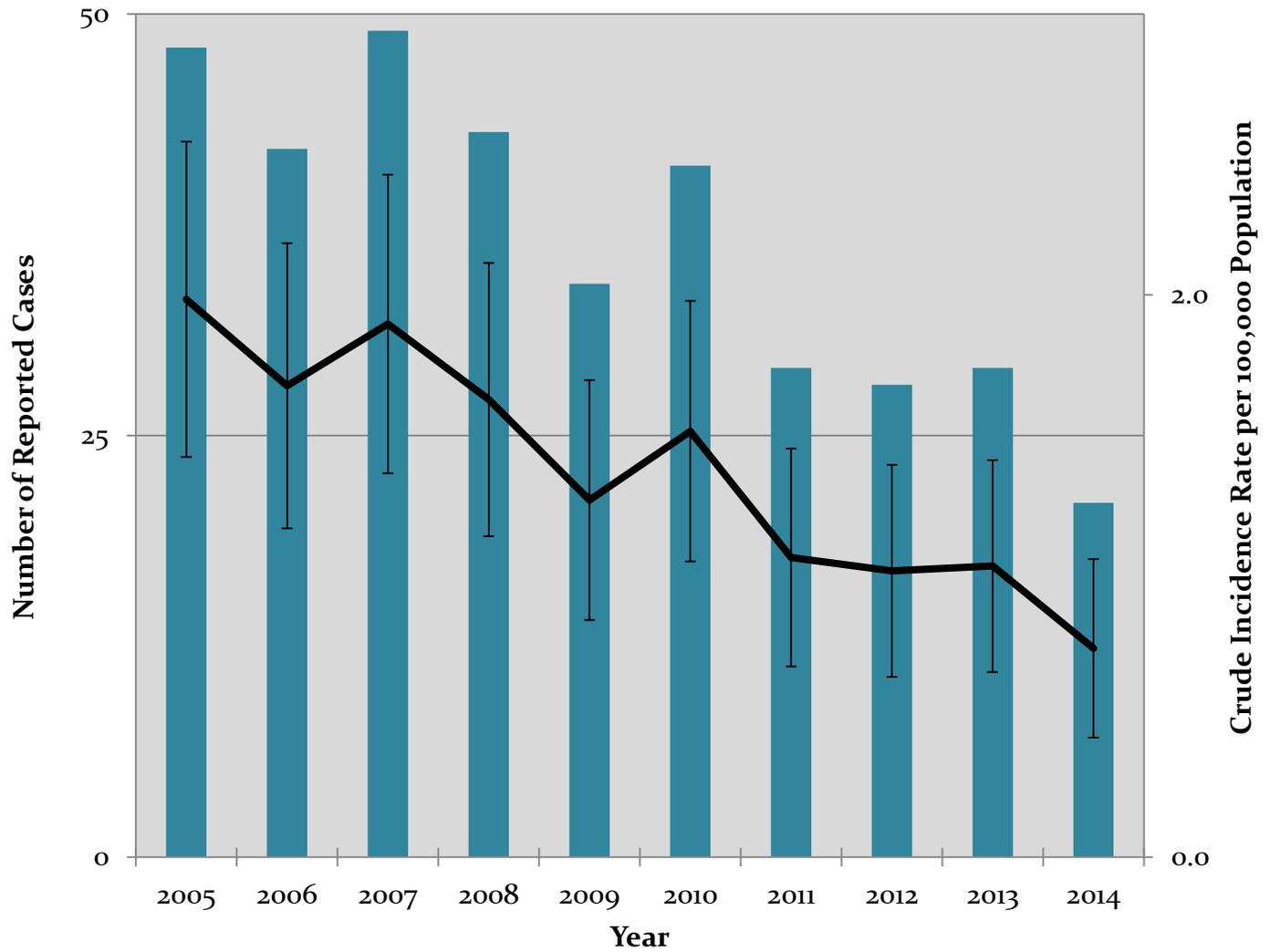
Healthy People 2020 objectives were updated to encompass all adults 19 years of age and older under one objective (objective: 1.5 cases per 100,000 population) (5). The incidence rate in 2014 was significantly lower than the objective, rates in 2011, 2012, and 2013 were neither significantly higher nor lower than the Healthy People 2020 objective.

There was no discernable monthly or seasonal trend in reported cases of acute hepatitis B between 2008 and 2014 (years for which monthly data is available). The number of reported cases ranged between 0 and 8 cases per month, depending on the year.

From 2005 to 2014, there was no significant difference in age-adjusted incidence rates between health districts or the overall state rate.

From 2005 to 2014, there were no reported cases of acute hepatitis B in infants less than 1 year of age or in children aged 1 to 4 years, and only one case was reported in individuals aged 5 to 14. Adults aged 25 to 39 and 40 to 64 years had a significantly higher incidence rate (2.7 and 2.0 cases per 100,000 population, respectively) compared to the 15 to 24 and 65 and older age groups (both 0.6 cases per 100,000 population).

Figure 1. Number of Reported Cases and Crude Incidence Rates of Acute Hepatitis B in Nevada: 2005-2014



■ Number of Cases — Incidence Rate
Error bars represent 95% confidence intervals for incidence rates

The crude incidence rate in Nevada from 2005 to 2014 was 1.4 cases per 100,000 population.

Figures 2A-B. Crude Incidence Rates of Acute Hepatitis B in Nevada, Compared to Healthy People 2010 Objective: 2005-2010

Figure 2A. Acute Hepatitis B Incidence Rate in Adults 25-39 Years of Age

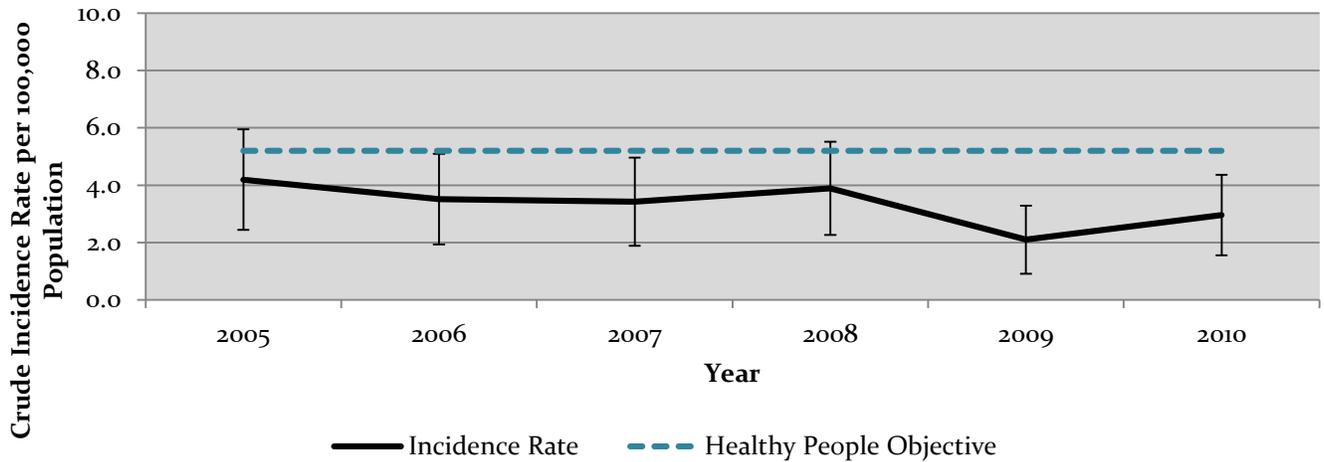


Figure 2B. Acute Hepatitis B Incidence Rate in Adults 40 Years of Age and Older

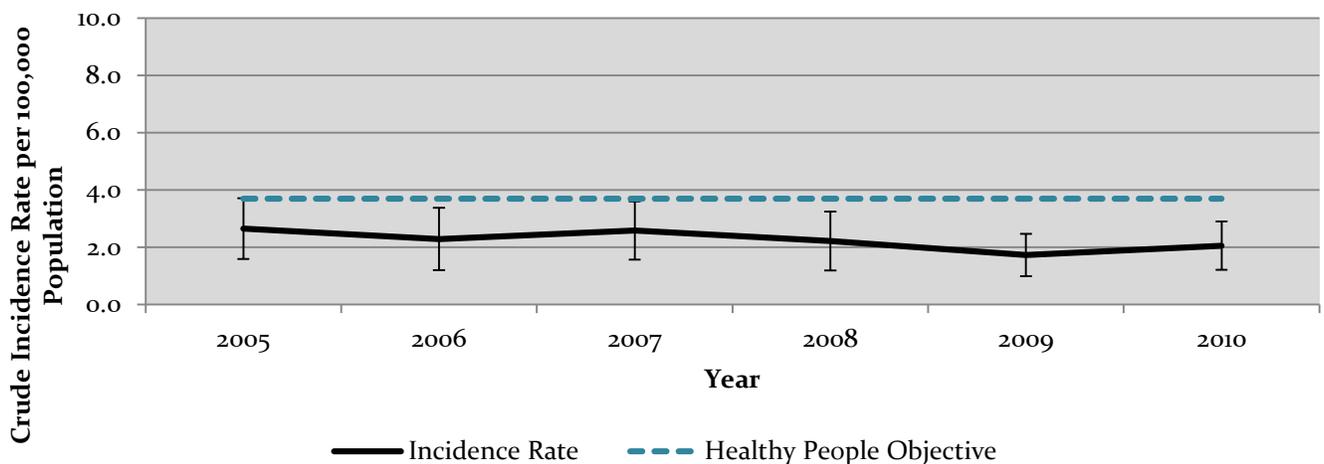


Figure 3. Age-Adjusted Incidence Rates of Acute Hepatitis B in Nevada and Nevada Health Districts: 2005-2014

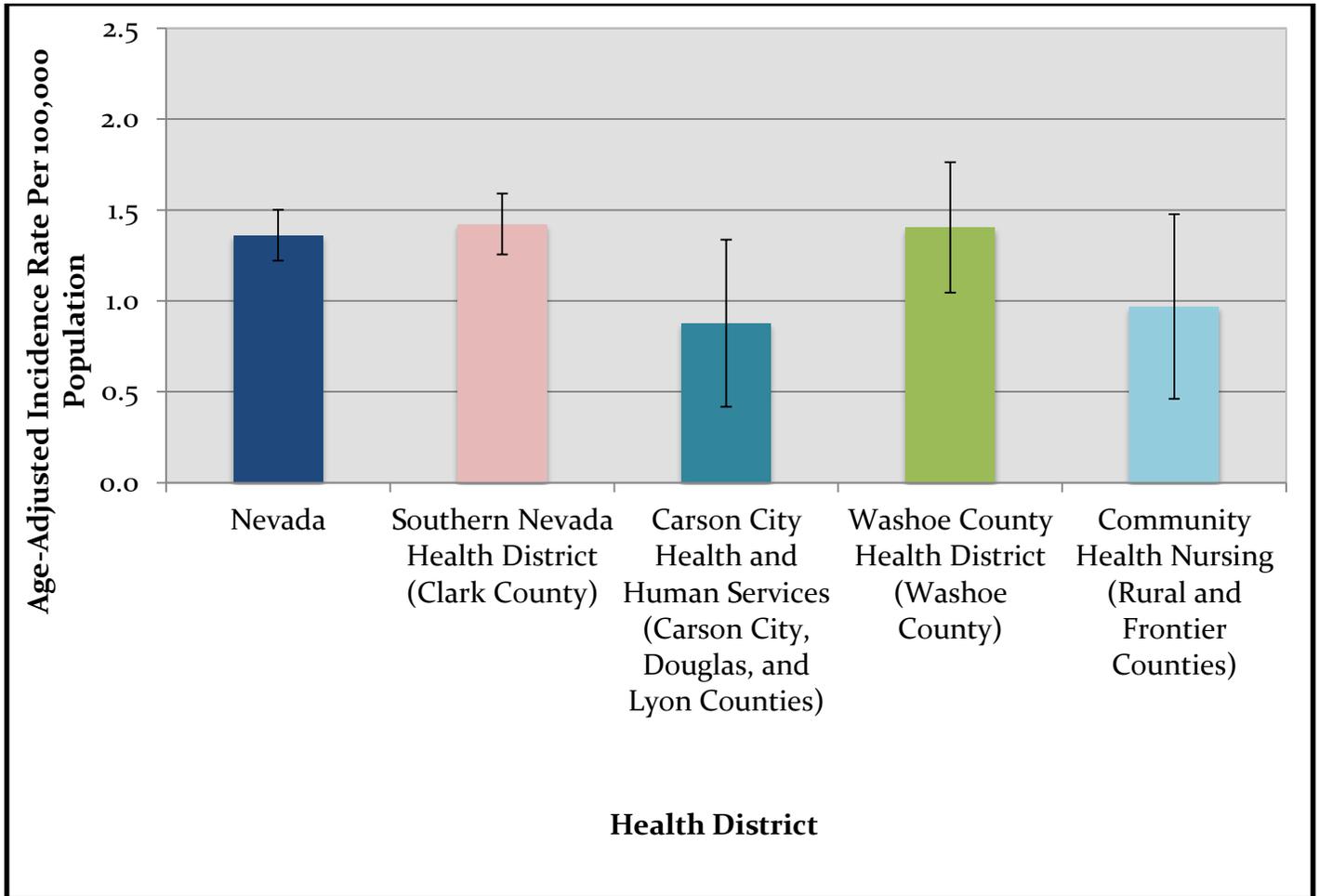
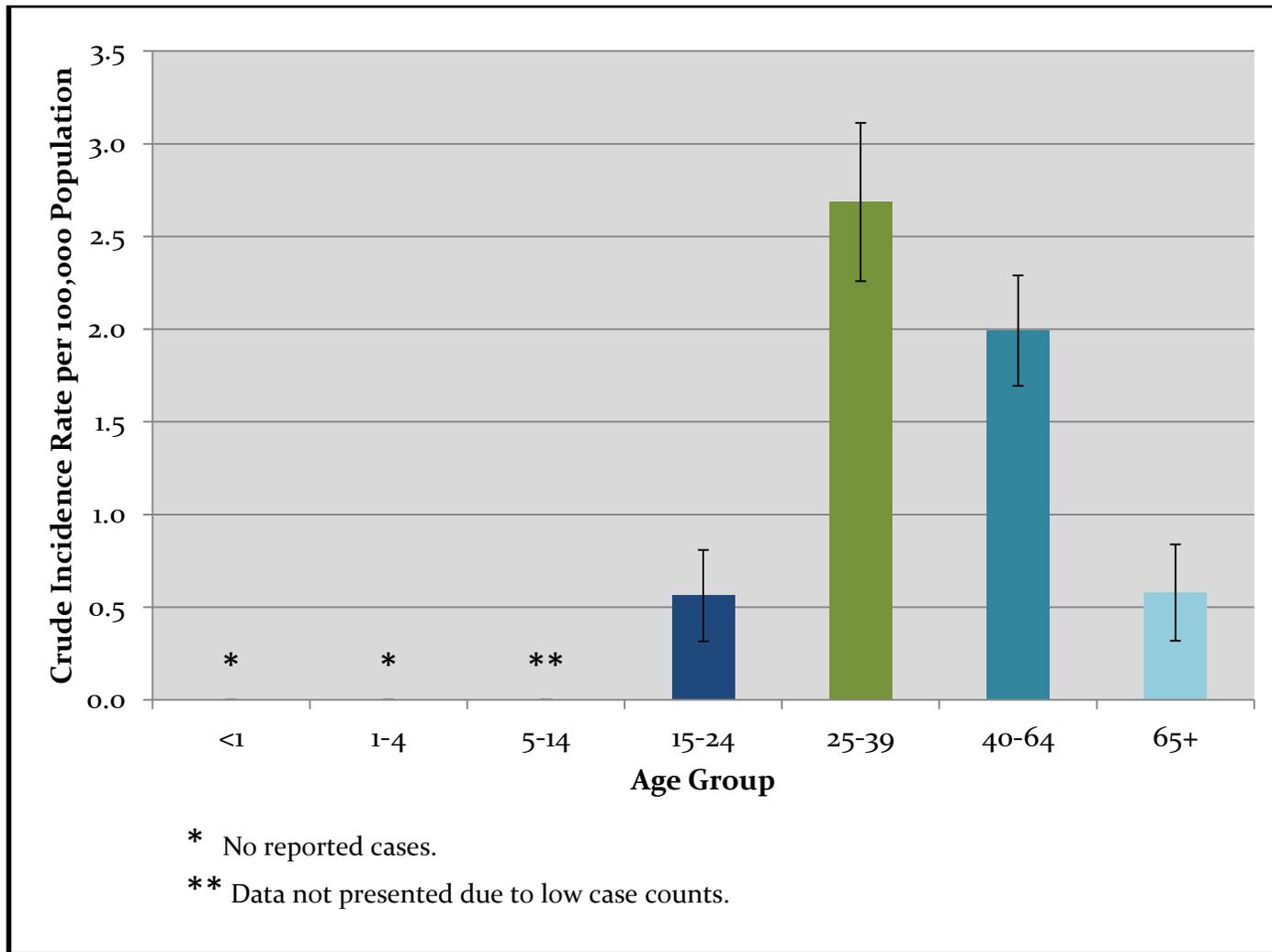


Figure 5. Crude Incidence Rates of Acute Hepatitis B in Nevada by Age Group: 2005-2014



Technical Notes

All Nevada data from 2005 to 2014 came from reported acute hepatitis B infections among Nevada residents (6, 7). The Centers for Disease Control and Prevention and the Council of State and Territorial Epidemiologists case definition of acute Hepatitis B encompasses all cases classified as confirmed; all cases of acute hepatitis B 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. Due to their inherent unreliability, rates were not calculated for case counts lower than five.

Sources

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For additional information regarding this publication, please contact:
Office of Public Health Informatics and Epidemiology
(775) 684-5911
outbreak@health.nv.gov

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