



Department of Health and Human Services

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Nevada State Immunization Program

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Background

Approximately 30,000 adults and 300 children in the United States die each year from vaccine-preventable diseases or their complications. Immunizations have significantly reduced morbidity and mortality among children and adults in the United States and globally. Immunizations are the most cost-effective method for improving overall public health. For each birth cohort vaccinated in the United States in accordance with the Advisory Committee on Immunization Practices (ACIP), a national committee housed with the Centers for Disease Control and Prevention (CDC) that determines vaccination standards:

- Society saves \$43.4 billion;
- Healthcare costs are reduced by \$9.9 billion;
- 33,000 lives are saved, and;
- 14 million cases of disease are prevented.¹

The CDC's National Centers for Infectious and Respiratory Diseases (NCIRD) houses the Immunization Services Division (ISD); each of the 50 states, Washington D.C., 6 cities/counties and 7 islands receive federal funding to operate and manage an Immunization Program and an Immunization Information System. These are called the 64 Immunization Awardees. Awardees are often organized differently; in Nevada, the Nevada State Immunization Program (NSIP) is administered by the Nevada Division of Public and Behavioral Health. The NSIP is organized into four sections – the Vaccines for Children (VFC) Program, the Immunization Information System which is officially named Nevada WebIZ, Perinatal Hepatitis B Prevention and Special Projects & Outreach.

The NSIP subgrants about half of its operating budget to the LHDs and the statewide immunization coalition to conduct grant-required activities on the state program's behalf. Nevada's LHDs include CCHHS, SNHD, WCHD and the Nevada State Division of Public & Behavioral Health which is responsible for the 14 rural counties. Nevada has one statewide immunization coalition, Immunize Nevada.

The statewide immunization promotion coalition, Immunize Nevada, is a key factor in improving immunization coverage throughout Nevada. Immunize Nevada achieved 501C-3 non-profit status in 2013 and is an integral partner in improving Nevada's immunization services infrastructure. Immunize Nevada is well received by communities across the state and continues to develop creative education opportunities for healthcare professionals, parents, the general public and Nevada's elected officials. Other key partners include Nevada's county health districts and health officers, community health nurses and tribal liaisons. Collaborating through advocacy, outreach, education and grass roots efforts, these organizations are the public's go-to sources for immunizations and reliable information.

Vaccines for Children Program

The VFC Program was created in 1994 by the federal government and is an entitlement program aimed at improving vaccine availability to vulnerable childhood populations. This program is administered by each of the 64 immunization awardees; the programs use federal grant dollars provided by the CDC to purchase and provide vaccine to enrolled

¹ Zhou, F., Santoli, J., Messonnier, M., Yusuf, R., Schefer, A. (2005). Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. *Archives of Pediatrics and Adolescent Medicine*. December 2005; 159: 1136-44.



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healthcare providers at no cost to the provider. Children must meet at least one of the following criteria to be eligible to receive VFC-funded vaccine²:

- Medicaid-enrolled or eligible
- Uninsured
- American Indian/Alaska Native
- Underinsured

Without this federally mandated program, many VFC-eligible children would likely go unvaccinated due to cost. Supplying vaccine to enrolled VFC Providers is a vital piece of NSIP’s day-to-day operations. The NSIP is also constantly recruiting new providers into the VFC Program. With a variety of new practices opening across the state, existing providers deciding to add immunization services and the possibility of re-recruiting former VFC Providers, it is important to continuously and aggressively recruit in order to add more VFC access points for Nevadans.

Figure 1 displays groups that are VFC eligible in Nevada. There is a pronounced difference between 2013 and 2016 data due to increased opportunities for insurance coverage or preventive requirements from the Patient Protection and Affordable Care Act. Less children are uninsured, dropping from 21 percent in 2013 to 9 percent in 2016. There are also more children utilizing VFC due to their enrollment or eligibility in Medicaid; this could be due to the enhanced public emphasis and understanding of health care coverage and exchange referrals.

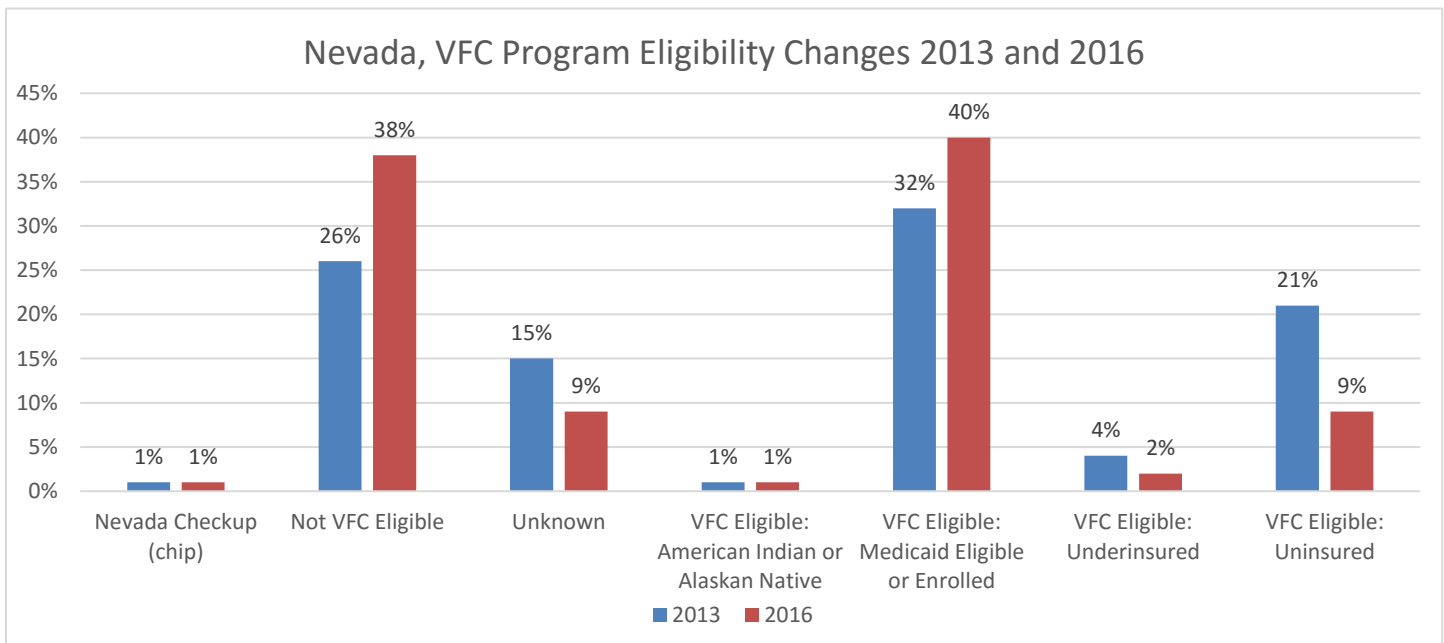


Figure 1. Nevada’s VFC Program Eligibility Changes 2013-2016.

² Centers for Disease Control and Prevention (CDC). (2014). Vaccines for Children Program Operations Guide. Atlanta: CDC, 28.



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Nevada Immunization Information Systems

In 2003, the NSIP introduced an electronic immunization information system (IIS) officially named Nevada WebIZ. IISs are confidential, population-based, online computerized databases that collect vaccination data on individuals in a specific geographic area, such as a state. IISs are used as a tool to gather vaccination records from multiple healthcare providers and consolidate them in one location.

During the 74th Nevada Legislative Session, Nevada Revised Statute (NRS) 439.265 was passed into law. This law, along with corresponding Nevada Administrative Code (NAC), requires any healthcare provider who administers ACIP-recommended vaccines to children and/or adults to record the administration of the immunization(s) in Nevada WebIZ. NRS 439.265 and the adoption of corresponding NACs 439.870-897 made it possible for all children's and adults vaccinations to be recorded in the IIS, with the choice to "opt-out"³. As a result, all vaccinations administered in Nevada to children and adults are mandated to be recorded in Nevada WebIZ. This became effective January 28, 2010.

Nevada WebIZ and Data Exchange

Nevada WebIZ has the capacity to electronically exchange data (i.e., "interface") with healthcare providers' electronic medical/health record systems (EMRs/EHRs). Nevada uses the industry standard Health Level 7 (HL7) version 2.5.1 protocol to exchange this type of patient immunization information. With the establishment of an HL7 interface, information is taken from the EMR/EHR, sent over the internet electronically, and uploaded into Nevada WebIZ, updating the system often immediately (e.g., "real-time" transmission). Using this method eliminates the need for double data entry, saving provider offices time and money and increasing accuracy and completion of the immunization data, as it only needs to be entered once into one system. As of December 2016, 434 medical facilities report immunization data to Nevada WebIZ via HL7.

Nevada WebIZ Statistics and National Immunization Survey

This section identifies how NRS 439.265 and NAC 439.870-897 have contributed to increasing the number of records in Nevada WebIZ and how the IIS affects Nevada's state ranking in regards to immunization coverage.

As of December 31, 2016 Nevada WebIZ had:

- 3,452,197 patient records, including non-Nevada residents who have received vaccines;
- Over 36 million vaccinations administered;
- 1,467 providers representing
- 2,943 clinics, and
- 15,125 active users.

Patients' Age Distribution: Of the 3,452,197 patient records in Nevada WebIZ,

- 30% are between 0-18 years, and
- 70% are 19 years and older.

³ Nevada Administrative Code: Chapter 439-Administration of Public Health. NAC 439.870-897. Website available at: <http://www.leg.state.nv.us/NAC/NAC-439.html#NAC439Sec870>. Accessed January 7, 2015.



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Nevada WebIZ also has the capacity to electronically send data (i.e., bi-directional interface) to healthcare providers' EMRs/EHRs. An HL7 bi-directional interface allows an EMR/EHR to query, or "ask," Nevada WebIZ for immunization data for a particular patient, which is then sent over the internet electronically, and uploaded into the EMR/EHR. Using a bi-directional interface eliminates the need for a provider to manually log in to Nevada WebIZ to look for the patient's complete immunization history and currently recommended immunizations. As of December 2016, 11 medical facilities have a bi-directional interface with Nevada WebIZ via HL7.

Every year, vaccination coverage for children 19-35 months of age is determined for each immunization awardee via the National Immunization Survey (NIS). The NIS is conducted jointly by the NCIRD and the National Center for Health Statistics (NCHS), both part of the CDC. The immunization rates for each state are placed in descending order to determine a national ranking. The NIS is conducted via landline and mobile telephone. The first phase is to survey parents on what vaccinations their child(ren) has received; often, parents are using their child's official record from Nevada WebIZ to respond. Then, with the parent's permission, surveyors contact the child's physician to match the parent's responses; physicians use either their electronic health record system or Nevada WebIZ to verify that the child received the immunizations.

The NIS data gathered is based upon the standard childhood vaccination series. Over time the series has changed due to the release of new vaccines and/or a change in the number of recommended doses. Currently, a 19-35 month old child is considered "up-to-date" on their vaccinations if they have received the number of doses per vaccine listed below:

- **2013-2015 Series = 4:3:1:3:3:1:4**
 - 4 doses diphtheria, tetanus, and acellular pertussis (DTaP)
 - 3 doses polio (e-IPV)
 - 1 dose measles, mumps, rubella (MMR)
 - 3 doses haemophilus influenza type b (Hib)
 - 3 doses hepatitis B (HepB)
 - 1 doses varicella (VZV)
 - 4 doses pneumococcal (PCV-13)

According to the NIS, Nevada has historically reported low immunization coverage rates for the full childhood series relative to other states and has consistently ranked low. Nationally, the average immunization coverage rate has remained around 70%, while rates for Nevada have been consistently below the national average. In 2014 and 2015, the NSIP did see improvements in our national ranking, after a sharp decline in 2013 (see Figure 3).

While rankings help us know where we stand compared to other states, it is the immunization coverage rate that is most important; and, regardless of national ranking, the coverage rate for Nevada's children has only improved over time. Figure 2 below displays the NIS immunization rates for the U.S. and Nevada from 2003-2015.⁴

Centers for Disease Control and Prevention (CDC). *U.S. Vaccination Coverage Reported via NIS*. Website available at: <http://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/index.html>. Accessed January 7, 2015.



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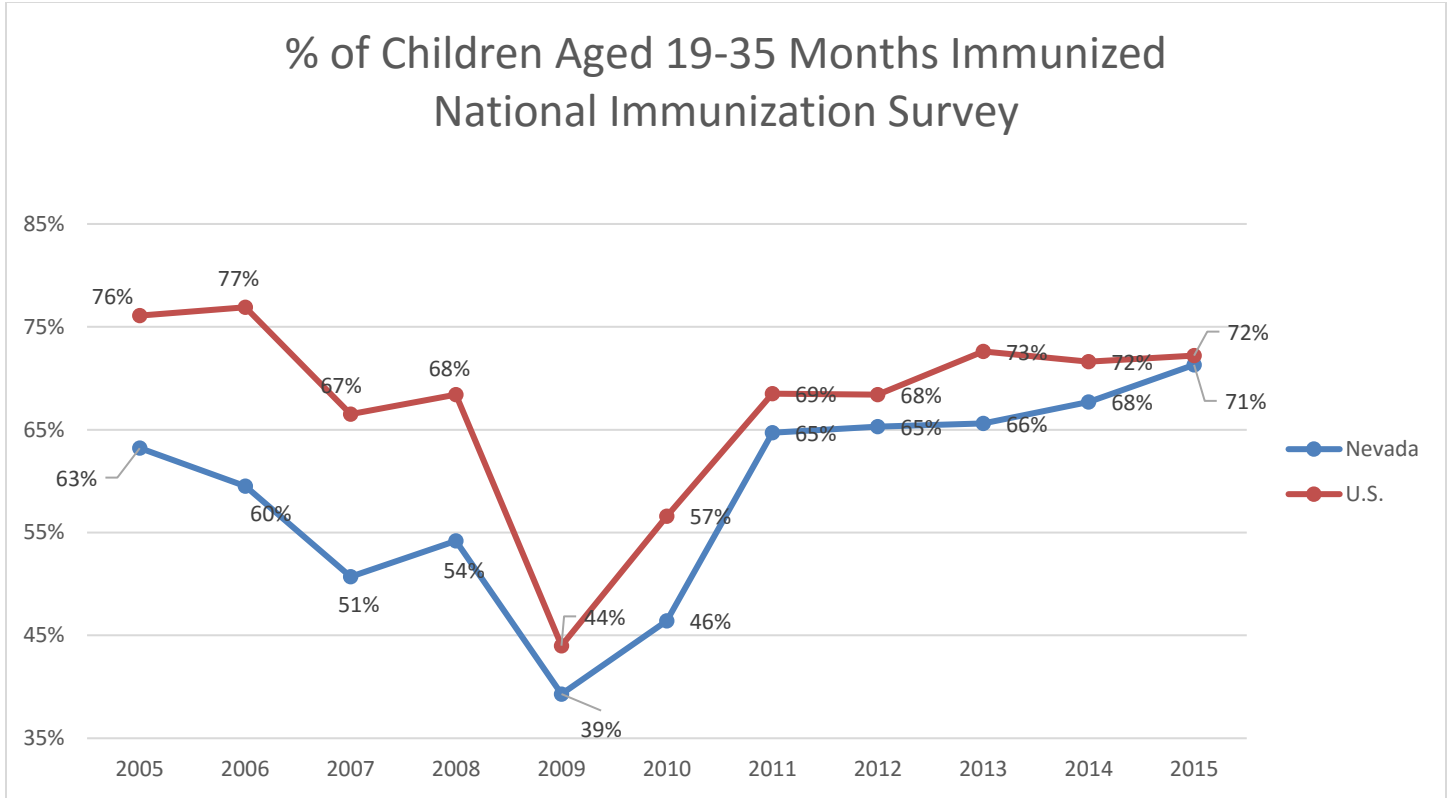


Figure 2. Percentage of Children Aged 19-35 Months Immunized in Nevada and the US, National Immunization Survey, 2005-2015.

NOTE: The very low rates observed in 2009 and 2010 in the U.S. and Nevada are due to a Hib vaccine shortage that began in 2009. The industry was not able to recover from this supply shortage until 2011.



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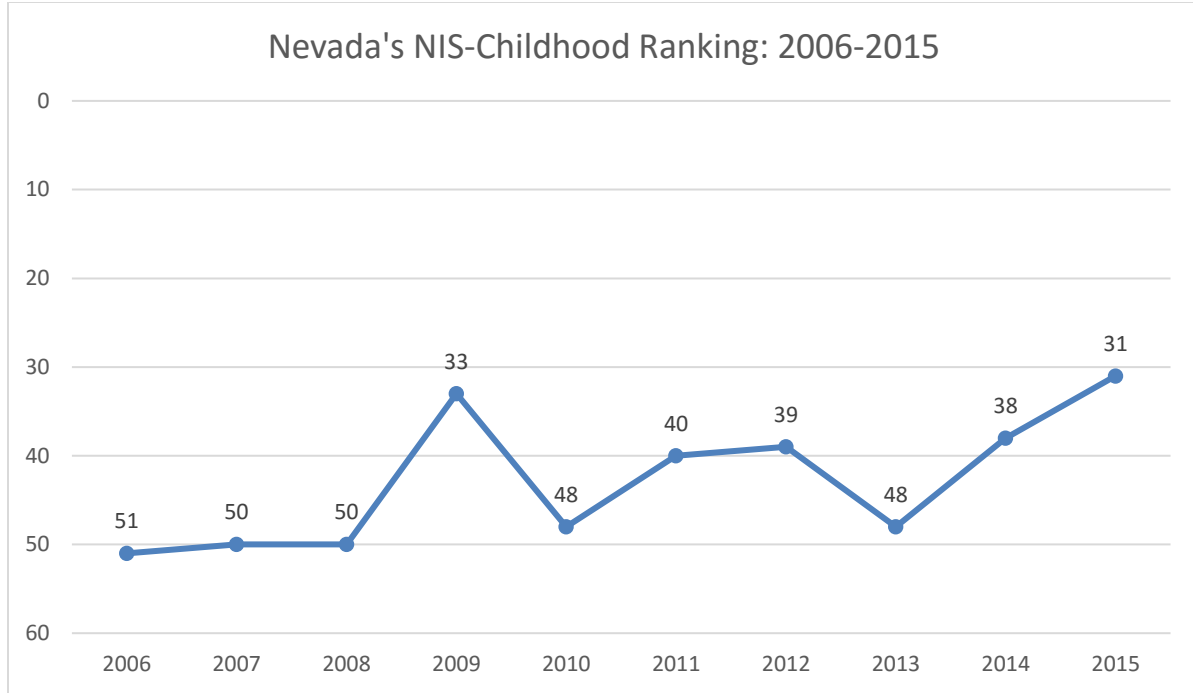


Figure 3. Nevada's National Immunization Survey Childhood Ranking: 2006-2015.

Perinatal Hepatitis B Prevention

The national perinatal Hepatitis B prevention program began in 1990 as part of the Vaccine and Immunization Amendments, because Congress recognized the need to foster efforts to prevent perinatal Hepatitis B transmission and make resources available to develop and implement state-administered programs. Since 1991, the CDC has annually awarded funds to support perinatal Hepatitis B prevention programs among 64 immunization awardees. Every awardee is required to conduct specific perinatal Hepatitis B prevention activities as part of their cooperative agreement with the CDC. The awardee's programs, including Nevada's, have made great strides in preventing Hepatitis B transmission from infected mothers to their newborns.

The NSIP employs one statewide coordinator and funds three county health districts to perform case management in their respective jurisdictions. These include Carson City Health and Human Services (CCHHS), Southern Nevada Health District (SNHD) and Washoe County Health District (WCHD). Having a perinatal Hepatitis B prevention program component is vital to the health of Nevadans:

- Hepatitis B is a blood borne and sexually transmitted virus. Rates of new infection and acute disease are highest among adults, but chronic infection is more likely to occur in persons infected as infants.
- It is crucial that infants born to Hepatitis B positive women receive the Hepatitis B birth dose of vaccine and Hepatitis B immune globulin (HBIG) within 12 hours of delivery.
- HBIG and the birth dose are 85% to 95% effective in preventing Hepatitis B infection in an infant born to a positive woman. If nothing is done, then newborns have a 90% chance of becoming chronic Hepatitis B carriers.
- Children who are not infected at birth remain at high risk from long-term interpersonal contact with their infected mother and other household contacts. Completing the birth dose and HBIG regimen and finishing the Hepatitis B vaccine series is a child's best chance at avoiding chronic infection.



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Nevada has consistently ranked above the national average for percentage of newborns who receive a Hepatitis B birth dose within 12 hours of birth; administering this birth dose is considered the medical standard of care. According to the 2013 National Immunization Survey (NIS)⁵, nearly 76 percent of Nevada newborns received their Hepatitis B birth dose within 12 hours of birth (please see Figure 4 below); ranking Nevada 6th in the nation when compared to other states. Though Nevada’s percentage is above the national average, there is still room for improvement in Nevada’s perinatal Hepatitis B prevention efforts.

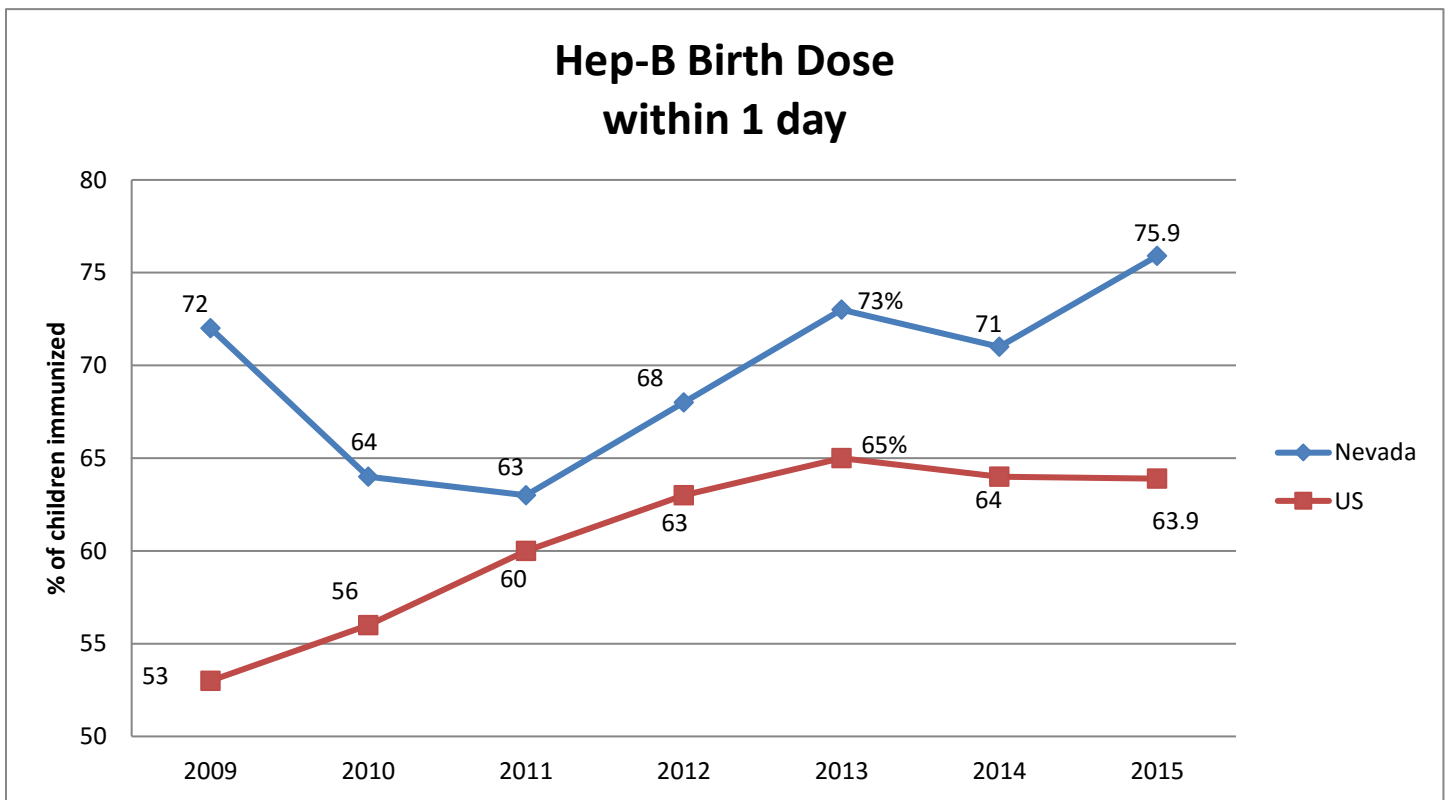


Figure 4. Hep-B Dose Birth Dose within One Day of Birth, 2009-2015.

Nevada’s Cocooning Program

Cocooning is a method of vaccinating close contacts of newborns, especially against pertussis and influenza. When those in close contact with a vulnerable newborn are vaccinated, a cocoon of protection is created to protect against communicable and infectious diseases. In 2006, Nevada started the first full-scope Cocooning Program at Renown Regional Medical Center (previously Washoe Medical). As of December 2014, 100 percent of Nevada’s 19 birthing hospitals continue to participate as well as 39 OB/GYN offices.

⁵ Centers for Disease Control and Prevention (CDC). *National Immunization Survey*. Website available at: <http://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/data/tables-2013.html>. Accessed January 2, 2015.



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Bordetella pertussis (whooping cough) can cause serious illness in newborns, infants, children and adults, and can be especially life-threatening for newborns and infants. The majority of pertussis-related deaths occur in infants less than 4 months old. More than half of infants under 1 year who are infected with pertussis will be hospitalized.

Affordable Care Act and Immunizations

The Affordable Care Act requires that Medicaid/Medicare and private insurance plans provide all services recommended by the U.S. Preventive Services Task Force (USPSTF) with no cost sharing, including all immunizations recommended by the Advisory Committee on Immunization Practices (ACIP). The ACA was expected to be an equalizer in the marketplace for preventive services; unfortunately, Nevada still has approximately 8-10 percent of existing health plans being considered “grandfathered”, meaning the health plan has not made any significant changes that required adherence to the new USPSTF guidelines. The percentage of grandfathered plans has decreased each year; however, those plans still remain an option for purchase in the healthcare insurance market.

The changing health care marketplace continues to create challenges for immunization delivery in Nevada and across the country. Physicians in private practice continue to experience great economic pressure as vaccine costs rise and reimbursement shrinks. Also, as the number of recommended vaccines has increased, some providers simply cannot afford to stock the increased inventory. As a result, more private offices are no longer administering all recommended vaccines and often refer their patients to local public health and/or Federally Qualified Health Center (FQHC) sites. Privately insured Nevadans also utilize these clinics for convenience, because access to a primary care physician can be limited due to the inability to quickly get appointments. Nevada has the lowest per capita public health funding of any state in the U.S. at \$3.28, while the median per-capita expenditure is \$27.13. Unfortunately, due to this and other factors, health districts and public health clinic sites are facing budget strains and personnel cuts at the same time their patient loads are increasing because of ACA implementation.

Nevada’s Medicaid expansion was immensely successful; however, Nevada is already functioning within a physician shortage environment. Nevada needs more than 2,800 new doctors if it wants to catch up with the national rate of physicians per capita, as we rank 47th in the country for our physician-to-population ratio. Many existing physicians are reluctant to see Medicaid patients (or to accept new Medicaid patients if they do see them) due to low reimbursement, which is also taxing the public health and FQHC sites previously mentioned. Medicaid-covered vaccine is supplied to children only through the VFC Program and only the administration fees are reimbursable. Nevada’s immunization leadership and stakeholders continue to express concern about this new fragmentation of the vaccine delivery system.