South Dakota Vaccine-Preventable Diseases, Vaccination Rates and Trends

South Dakota Pharmacist Association
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Deadwood, South Dakota

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State Epidemiologist
South Dakota Department of Health
Disclosure statement

Confidences Revealed

I have had no financial relationship over the past 12 months with any commercial sponsor with a vested interest in this presentation.
SD laws: vaccinations and pharmacists

SDCL 36-11-19.1. Authority of registered pharmacists. Registered pharmacists may:

(1) Perform **drug administration** pursuant to a prescription drug order. The Board of Pharmacy shall establish standards for drug administration pursuant to chapter 1-26 with the approval of a committee composed of two persons appointed by the Board of Pharmacy, two persons appointed by the Board of Nursing and two persons appointed by the Board of Medical and Osteopathic Examiners;

(2) Perform drug reviews;

(3) Perform or participate in scientific or clinical drug or drug-related research as an investigator or in collaboration with other investigators;

(4) Interpret and apply pharmacokinetic data and other pertinent laboratory data to design safe and effective drug dosage regimens;

(5) Participate in drug and drug device selection pursuant to a prescription drug order;

(6) Initiate or modify drug therapy by protocol or other legal authority established and approved within a licensed health care facility or by a practitioner authorized to prescribe drugs; and

(7) Provide information on prescription drugs, which may include advising, consulting, and educating, as necessary or as required, patients, the public, and other health care providers on the rational, safe and cost-effective use of drugs, including therapeutic values, content, hazards and appropriate use.

ADMINISTRATION OF INFLUENZA IMMUNIZATIONS

20:51:28:01 Authority to administer influenza immunizations.

20:51:28:02 Qualifications for authorization to administer influenza immunizations.

20:51:28:03 Standards for approval of influenza immunization training programs.

20:51:28:04 Training program requirements.

20:51:28:05 Record keeping and reporting requirements.

20:51:28:06 Confidentiality of records maintained.

20:51:28:07 Renewal of authorization to administer influenza immunizations.

20:51:28:01. Authority to administer influenza immunizations. A pharmacist may administer influenza immunizations to eligible patients eighteen years of age and older if the pharmacist has met the qualifications set forth by this chapter and has been granted authorization by the board. The board may issue a certificate authorizing this function to the pharmacist who meets the qualifications established in § 20:51:28:02. The authority to administer influenza immunizations is valid only for the pharmacist meeting this requirement and may not be delegated to any other pharmacist or employee.
Vaccine—Preventable Diseases by Age Group

Infants & Toddlers
- Hepatitis B
- Diphtheria
- Tetanus
- Pertussis
- Hib
- Pneumococcal
- Polio
- Measles
- Mumps
- Rubella
- Chickenpox
- Hepatitis A
- Influenza
- Rotavirus

Children 3-18 years
- Diphtheria
- Tetanus
- Pertussis
- Polio
- Measles
- Mumps
- Rubella
- Influenza
- Meningococcal
- Human papillomavirus

Adults >18 years
- Influenza
- Diphtheria
- Tetanus
- Pertussis
- Human papillomavirus
- Zoster
- Pneumococcal

2015 ACIP/CDC recommendations
See handouts
Polio deaths, United States, 1950-2014

Source: CDC, Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th ed, 2015
Diphtheria deaths,
United States, 1950-2014

Diphtheria toxoid vaccine since 1930’s

Source: CDC, Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th ed, 2015
Measles deaths, United States, 1950-2015

Vaccine Licensed 1963

Source: CDC, Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th ed, 2015
Measles cases reported, USA, 1975-2015 (*as of 8 Aug 2015)

Measles, USA, 1993-2015

Resurgence
Impact of vaccines: Comparison of 20th Century Annual Morbidity with Current Morbidity

Percent decrease in United States

<table>
<thead>
<tr>
<th>Disease</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallpox</td>
<td>100%</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>100%</td>
</tr>
<tr>
<td>Pertussis</td>
<td>86%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>96%</td>
</tr>
<tr>
<td>Polio</td>
<td>99%</td>
</tr>
<tr>
<td>Measles</td>
<td>99%</td>
</tr>
<tr>
<td>Mumps</td>
<td>99%</td>
</tr>
<tr>
<td>Haemophilis</td>
<td>99%</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>99%</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>88%</td>
</tr>
<tr>
<td>Pneumococcus</td>
<td>72%</td>
</tr>
<tr>
<td>Varicella</td>
<td>96%</td>
</tr>
</tbody>
</table>

Source: CDC, Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th ed, 2015, page E-7
Pre- and Post-Vaccination cases, South Dakota (10 years prior to vaccine licensure vs. 10 years after licensure)

<table>
<thead>
<tr>
<th>Disease and year of vaccine licensure</th>
<th>Pre-Vaccine</th>
<th>Post-Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polio 1955</td>
<td>3,509</td>
<td>111</td>
</tr>
<tr>
<td>Measles 1963</td>
<td>5,440</td>
<td>778</td>
</tr>
<tr>
<td>Hepatitis A 1995</td>
<td>2,158</td>
<td>134</td>
</tr>
</tbody>
</table>

-97% decrease in Polio cases
-86% decrease in Measles cases
-94% decrease in Hepatitis A cases
Polio cases in South Dakota, 1950-2014

Source: South Dakota Department of Health
Hepatitis A cases in South Dakota, 1954-2014

Source: South Dakota Department of Health
Haemophilus influenzae b cases in South Dakota, 1979-2014

Source: South Dakota Department of Health
Pertussis cases in South Dakota, 1950-2014

Source: South Dakota Department of Health
Measles Strikes Again
Reported Cases in South Dakota, 1913-2015

SD measles, 1980-2014

Vaccine Licensed 1963
Measles basics

Measles or Rubeola or Hard Measles or Red Measles.

- Paramyxovirus, Morbillivirus: RNA, protein, lipid.
- First described in 910 AD by Abu Bakr Muhammad, Baghdad.
- Formerly a “childhood disease”.
- One of the most highly contagious diseases.
- Still kills about a million people a year globally.
- Transmission: direct contact, droplets, airborne.
- Incubation period: 10 days (7-21 days).
- Communicability period: 4 days before rash to 4 days after rash appearance.
- Usually more severe in adults.
- Lab test: IgM serology or PCR on nasal or throat specimen.
- Life-long immunity to measles after disease or immunization.
Measles basics

Measles rash
• Rash begins on face and proceeds down the body to involve the extremities last, including palms and soles.
• Erythematous and maculopapular, may become confluent.
• Rash lasts about 5 days.
  • Maculopapular rash contains both macules and papules.
    A macule is flat discolored skin, and a papule is a small raised bump.
    A maculopapular rash is usually a large area that is red, and has small, confluent bumps.

Treatment
• No specific treatment.
• Supportive care: Maintain hydration, antipyretics.
• Vitamin A.
Measles complications
(per 1,000 cases), US 1985-1992

- Diarrhea: 100
- Otitis media: 100
- Pneumonia: 50
- Seizures: 7
- Encephalitis: 1
- Death: 3

- May cause premature birth or low birth weight.
- Subacute sclerosing panencephalitis: rare, but fatal.
- Case-fatality in among malnourished children as high as 30%.
Measles response measures

• Assure proper care of patient.
• Verify diagnosis.
• Active surveillance to find other cases in family and community.
• Prospective contact study to find individuals who the case may have exposed (4 days before to 4 days after rash onset).
• Retrospective contact study to determine source of infection (back to 21 days before rash onset).
• MMR vaccination for all unvaccinated individuals who were exposed (must be done within 72 hours of exposure).
• Immunoglobulin prophylaxis to exposed and susceptible persons within 6 days of exposure.
• Mass vaccination effort in community for unvaccinated individuals born in 1957 or after.
• Raise awareness to find susceptible persons (unvaccinated persons too young, <1 yr, or unvaccinated by choice).
• Case exclusions from daycare or school.
• Exclude unvaccinated susceptible persons from daycare, school healthcare setting until 21 days after last rash onset.
Measles Case Definition (2013)
http://wwwn.cdc.gov/NNDSS/script/casedef.aspx?CondYrID=908&DatePub=1/1/2013%2012:00:00%20AM

Clinical Description
• An acute illness characterized by:
  – Generalized, maculopapular rash lasting ≥3 days; and
  – Temperature ≥101°F or 38.3°C; and
  – Cough, coryza, or conjunctivitis.

Case Classification
• Probable
  In the absence of a more likely diagnosis, an illness that meets the clinical description with:
  – No epidemiologic linkage to a laboratory-confirmed measles case; and
  – Noncontributory or no measles laboratory testing.

• Confirmed
  An acute febrile rash illness† with:
  – Isolation of measles virus‡ from a clinical specimen; or
  – Detection of measles-virus specific nucleic acid‡ from a clinical specimen using polymerase chain reaction; or
  – IgG seroconversion‡ or a significant rise in measles immunoglobulin G antibody‡ using any evaluated and validated method; or
  – A positive serologic test for measles immunoglobulin M antibody‡§; or
  – Direct epidemiologic linkage to a case confirmed by one of the methods above.

† Temperature does not need to reach ≥101°F/38.3°C and rash does not need to last ≥3 days.
‡ Not explained by MMR vaccination during the previous 6-45 days.
§ Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health lab.
Recent measles outbreaks in South Dakota

• **1990 measles outbreak:**
  University of South Dakota, 23 cases.

• **1997 measles outbreak in Central South Dakota.**
  – 8 cases.
  – 3 generations of transmission.
  – Counties: Hughes (3) and Hyde (5).
  – Age median 23 yrs (range 12 mo – 37 yr).
  – Outbreak burnt out before DOH notified.
Dodging the viral bullet in South Dakota

• **2014:** Cluster outbreak of unvaccinated family group in Davison County. 13 cases.
• **2011:** North Dakota resident became sick with measles while staying in Rapid City motel and received care in local clinic. No secondary cases.
• **2011:** measles outbreak in Minneapolis immigrant community exposed several South Dakota children. No cases.
• **2010:** group of Sioux Falls school children exposed to measles while on Omaha field trip. No cases.
• **2007:** group of South Dakota students exposed to measles while attending science fair in Albuquerque. No cases.

We have been lucky, but it’s not all luck. It is good primary prevention by maintaining high vaccination coverage.
2014-5 South Dakota Measles Outbreak

13 cases [each box = one case]

2nd generation
SD residents visit sick brother in KS hospital

3rd generation of cases

4th generation of cases

Index case

December 2014

January 2015

DOH Notified

3 Arizona

India-Kansas
Davison County, South Dakota Measles Outbreak: 13 cases and 187 contacts (as of 13 Jan 2015)

- 14 cases in 3 states.
- At least 187 contacts in 7 states.
- 4 generations of transmission.
- None immunized by personal choice.
- No deaths, one hospitalization.
- Age range 19 mo – 41 yr.
- DOH notified 27 December 2014 by Queen of Peace hospital.
- Active surveillance until 21 days after last case.
- Not related to concurrent Disney Land outbreak.
A majority of measles cases have been tied to an outbreak at Disneyland, which began in December 2014. At least 40 people who visited or worked at Disney contracted measles, and the disease has spread to at least 6 other states.

Map shows counties where cases have been reported. (New York Times 3 Feb 2015)
Children 19-35 months, percent vaccinated, South Dakota 2003-2014 (NIS)

*4:3:1  ≥4 doses of DTaP, ≥3 doses of polio and ≥1 doses of MMR vaccine

*4:3:1  ≥4 doses of DTaP, ≥3 doses of polio and ≥1 doses of MMR vaccine
Children 19-35 months, percent vaccinated, South Dakota 2003-2014 (NIS)

*4:3:1  ≥4 doses of DTaP, ≥3 doses of polio and ≥1 doses of MMR vaccine
Children 19-35 months old, vaccination coverage rates, South Dakota and United States, 2014 (NIS)

- DTaP ≥3doses: South Dakota 87.8%, United States 84.2%
- DTaP ≥4doses: South Dakota 97.9%, United States 93.3%
- Polio ≥3doses: South Dakota 94.1%, United States 91.5%
- MMR ≥1dose: South Dakota 92.6%, United States 91.0%
- Hib ≥3doses: South Dakota 76.3%, United States 71.6%
- Pneumococcal ≥4doses: South Dakota 50.0%, United States 57.5%
- Hepatitis A ≥2doses: South Dakota 4:3:1 group†, United States 4:3:1:3:3:1:4 group§
- Hepatitis B ≥3doses: South Dakota 96.3%, United States 91.6%
- Varicella ≥1doses: South Dakota 92.6%, United States 92.6%

CDC. National and state vaccination coverage among children aged 19-35 months – United States, 2013. August 29, 2014 / 63(34);741-748
Pre-measles outbreak: SD immunization clinics
MMR-1 vaccination coverage, children 19-35 months old on 31 October 2014

ALL SOUTH DAKOTA 90.2% coverage
- 274 clinic sites.
- 179 clinics (65%) above 90% coverage.
- 38 clinics (14%) below 80% coverage.

Each bar represents 1 clinic (SDIIS)
Post-measles outbreak: SD immunization clinics
MMR-1 vaccination coverage, children 19-35 months
old on 28 February 2015

ALL SOUTH DAKOTA 90.9% coverage
• 275 clinic sites.
• 175 clinics (64%) above 90% coverage.
• 45 clinics (16%) below 80% coverage.
Vaccination coverage rates and exemptions for Kindergarten students, South Dakota and United States, 2013-14 school year

- DTaP ≥4 doses: United States 95.0%, South Dakota 96.7%
- MMR ≥2 doses: United States 94.7%, South Dakota 96.6%
- Varicella ≥2 doses: United States 93.3%, South Dakota 95.3%
- Medical exemptions: United States 0.2%, South Dakota 0.2%
- Non-Medical exemptions: United States 1.7%, South Dakota 1.6%

CDC. Vaccination Coverage Among Children in Kindergarten — United States, 2013–14 School Year; MMWR 17 Oct 2014. 63(41);913-920.
Teens 13-17 years, vaccination coverage rates, South Dakota and United States, 2014 (NIS)

- MMR ≥2 doses (rank 11th)
  - United States: 94.8%
  - South Dakota: 90.7%

- Varicella ≥2 doses* (rank 46th)
  - United States: 81.0%
  - South Dakota: 63.0%
  - *No history of disease

- HPV ≥3 doses, female (rank 42nd)
  - United States: 39.7%
  - South Dakota: 33.1%

- Meningococcal ≥1 dose (rank 47th)
  - United States: 79.3%
  - South Dakota: 57.0%

- Tdap ≥1 doses since age 10 (rank 48th)
  - United States: 87.6%
  - South Dakota: 75.0%

Teens 13-17 years, vaccination coverage rates, South Dakota, 2008-2014 (NIS)

<table>
<thead>
<tr>
<th>Year</th>
<th>≥1 Tdap</th>
<th>≥2 Varicella</th>
<th>≥1 Mening ACWY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>9.6</td>
<td>23.4</td>
<td>35</td>
</tr>
<tr>
<td>2009</td>
<td>24.2</td>
<td>49.4</td>
<td>53.7</td>
</tr>
<tr>
<td>2010</td>
<td>20.4</td>
<td>53.7</td>
<td>61.2</td>
</tr>
<tr>
<td>2011</td>
<td>39.6</td>
<td>61.2</td>
<td>60.0</td>
</tr>
<tr>
<td>2012</td>
<td>41.3</td>
<td>60.0</td>
<td>68.8</td>
</tr>
<tr>
<td>2013</td>
<td>48.7</td>
<td>50.6</td>
<td>58.3</td>
</tr>
<tr>
<td>2014</td>
<td>58.3</td>
<td></td>
<td>73.7</td>
</tr>
</tbody>
</table>
Teens 13-17 years, HPV vaccination coverage rates, South Dakota and USA, 2008-2014 (NIS)

- ≥3 HPV SD boy
- ≥1 HPV SD girl
- ≥3 HPV SD girl
- ≥3 HPV USA girl
- ≥1 HPV SD boy
- ≥1 HPV USA boy

Percent vaccinated over time from 2008 to 2014.
<table>
<thead>
<tr>
<th>Year</th>
<th>10 years</th>
<th>11 years</th>
<th>12 years</th>
<th>13 years</th>
<th>14 years</th>
<th>15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.1</td>
<td>1.9</td>
<td>5.2</td>
<td>14.9</td>
<td>25.9</td>
<td>64.8</td>
</tr>
<tr>
<td>2007</td>
<td>0.6</td>
<td>1.9</td>
<td>4.5</td>
<td>13.4</td>
<td>19.1</td>
<td>29.7</td>
</tr>
<tr>
<td>2008</td>
<td>0.4</td>
<td>1.3</td>
<td>4.7</td>
<td>13.4</td>
<td>18.9</td>
<td>25.1</td>
</tr>
<tr>
<td>2009</td>
<td>0.2</td>
<td>0.8</td>
<td>3.5</td>
<td>7.7</td>
<td>11.5</td>
<td>17.9</td>
</tr>
<tr>
<td>2010</td>
<td>0.3</td>
<td>0.6</td>
<td>1.6</td>
<td>3.5</td>
<td>7.4</td>
<td>12.4</td>
</tr>
<tr>
<td>2011</td>
<td>0.4</td>
<td>0.6</td>
<td>1.6</td>
<td>3.5</td>
<td>7.4</td>
<td>12.4</td>
</tr>
<tr>
<td>2012</td>
<td>0.3</td>
<td>0.6</td>
<td>1.6</td>
<td>3.5</td>
<td>7.4</td>
<td>12.4</td>
</tr>
<tr>
<td>2013</td>
<td>0.3</td>
<td>0.6</td>
<td>1.6</td>
<td>3.5</td>
<td>7.4</td>
<td>12.4</td>
</tr>
<tr>
<td>2014</td>
<td>0.3</td>
<td>0.6</td>
<td>1.6</td>
<td>3.5</td>
<td>7.4</td>
<td>12.4</td>
</tr>
</tbody>
</table>

Varicella x2: percent of children 10-15 years vaccinated on 30 June of given year 2006-2014, South Dakota IIS

- Children 15 years of age in 2014 (highlighted) progressed as follows:
  - 9.6% in 2009
  - 13.4% in 2010
  - 18.9% in 2011
  - 24.4% in 2012
  - 27.9% in 2013
  - 31.3% in 2014

However, children who were 11 years old in 2014 progressed from 77.6% in 2013 to 78% in 2010. These children started kindergarten in 2008 under the new entry law. This suggests they will likely not reach the 90% goal by status quo without an extra push.

Children who were 10 years old in 2014 had only 74.1% coverage.
Vaccination coverage rates for adults, South Dakota and United States, 2013

- **Tetanus 10 yr**
  - South Dakota: 64.8%
  - United States: 58.7%

- **Ever had a pneumonia vaccination, age 65+**
  - South Dakota: 67.1%
  - United States: 70.0%

- **Influenza in past year, age 65+**
  - South Dakota: 68.3%
  - United States: 61.0%

State Influenza vaccination percent coverage for 2013–2014 season (NIS and BRFSS estimates)
South Dakota rates and rank among states by age group, (NIS/BRFSS influenza vaccination), 2013-2014

- **≥6 m**: 57.4% (1st)
- **6m-4 yr**: 67.6% (32nd)
- **6m-17 yr**: 68.5% (6th)
- **5-12 yr**: 73.2% (3rd)
- **13-17 yr**: 62.4% (2nd)
- **18+ yr**: 54.0% (1st)
- **18-49 yr**: 45.9% (2nd)
- **18-64 yr**: 49.2% (1st)
- **HR 18-64 yr**: 47.9% (9th)
- **50-64 yr**: 55.5% (2nd)
- **64+ yr**: 72.8% (5th)
Vaccine effectiveness ($\pm 95\%$CI) estimates for influenza seasons, 2004-2015

(www.cdc.gov/flu/professionals/vaccination/effectiveness-studies.htm)
Influenza vaccination 2015-2016 season

• **Trivalent influenza vaccines** will contain: hemagglutinin (HA) derived from an
  – A/California/7/2009 (H1N1)-like virus, an
  – A/Switzerland/9715293/2013 (H3N2)-like virus,
  – B/Phuket/3073/2013-like (Yamagata lineage) virus.
  This represents changes in the influenza A (H3N2) virus and the influenza B virus as compared with the 2014–15 season.

• **Quadrivalent influenza vaccines** will also contain:
  – B/Brisbane/60/2008-like (Victoria lineage) virus
    (which is the same Victoria lineage virus recommended for quadrivalent formulations in 2013–14 and 2014–15).
Influenza vaccine: ACIP recommends

See:  [www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a3.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a3.htm)

1. All persons aged ≥6 months should receive influenza vaccine annually.

2. Healthy children aged 2 through 8 years who have no contraindications or precautions, either LAIV or IIV is an appropriate option. No preference is expressed for LAIV or IIV for any person aged 2 through 49 years for whom either vaccine is appropriate.

3. LAIV should not be used in the following populations:
   - Persons aged <2 years or >49 years;
   - Persons with contraindications listed in package insert:
     - Children aged 2 - 17 years who are receiving aspirin or aspirin-containing products;
     - Persons who have experienced severe allergic reactions to the vaccine, or to a previous dose of any influenza vaccine;
   - Pregnant women;
   - Immunocompromised persons;
   - Persons with a history of egg allergy;
   - Children aged 2 -4 years who have asthma or who have had a wheezing episode within the past 12 months.
   - Persons who have taken influenza antiviral medications within the previous 48 hours.

4. LAIV is not recommended for persons with other underlying medical conditions that might predispose them to complications after wild-type influenza virus infection (e.g., chronic pulmonary, cardiovascular [except isolated hypertension], asthma, renal, hepatic, neurologic, renal, hematologic, or metabolic disorders [including diabetes mellitus]), has not been established.

5. Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV, or should avoid contact with such persons for 7 days after receipt.
School immunization statute

**SDCL 13-28-7.1.** Tests and immunizations for communicable diseases required for admission to school or early childhood program—Exceptions—Rules. Any pupil entering school or an early childhood program in this state, shall, prior to admission, be required to present to the appropriate school authorities certification from a licensed physician that the child has received or is in the process of receiving adequate immunization against poliomyelitis, diphtheria, pertussis, rubeola, rubella, mumps, tetanus, and varicella, according to recommendations provided by the Department of Health. The Department of Health may modify or delete any of the required immunizations. As an alternative to the requirement for a physician's certification, the pupil may present:

1. Certification from a licensed physician stating the physical condition of the child would be such that immunization would endanger the child's life or health; or

2. A written statement signed by one parent or guardian that the child is an adherent to a religious doctrine whose teachings are opposed to such immunization; or

3. A written statement signed by one parent or guardian requesting that the local health department give the immunization because the parents or guardians lack the means to pay for such immunization.

The Department of Health may promulgate reasonable rules, in accordance with chapter 1-26, to require compliance and documentation of adequate immunization, to define appropriate certification, and to specify standard procedure.

Vaccination MMR coverage (%) at kindergarten entry by state, 2013-14

Source: www.cdc.gov/mmwr/preview/mmwrhtml/mm6341a1.htm
Vaccination DTaP coverage (%) at kindergarten entry by state, 2013-14

Source: www.cdc.gov/mmwr/preview/mmwrhtml/mm6341a1.htm
Estimated percentage of kindergarten children with exemption from vaccination, by state, 2013–14 school year

Source: www.cdc.gov/mmwr/preview/mmwrhtml/mm6341a1.htm
Kindergarten vaccination exemptions,
South Dakota 2002-2014

- Religious exemptions
- Medical exemptions
- Percent exempt
Kindergarten vaccination exemptions (%) by county, South Dakota, 2013-14 and 2014-2015

State wide: 1.7% exempt
Range: 8.2% to 0%

Source: South Dakota Department of Health (2013 cohort as denominator)
South Dakota Dept of Health
Immunization Program

• Immunization program coordinator: Tim Heath
• Nurse educator: Barbra Philips
• Immunization Registry: Tammy LeBeau
• Vaccine supply manager: Julie Ramsey
• Phone: 605-773-2795 or 800-592-1861
• Website: https://doh.sd.gov/family/childhood/immunization/
Where are vaccination given?

Children 19-35 months on 28 Feb 2015, South Dakota

All sites n = 17,296

- Sanford, 5331, 31%
- Avera, 4260, 25%
- IHS, 1305, 8%
- DOH-CHS, 800, 5%
- Regional, 792, 5%
- Horizon, 262, 2%
- CHCBH, 234, 1%
- Primecare, 156, 1%
- Huron, 90, 1%
- Lewis, 80, 0%
- Falls, 80, 0%
- PCH, 41, 0%
- LewisClark, 37, 0%
- RuralHC, 34, 0%
- RCMC, 30, 0%
- WRHS, 30, 0%
- state, 24, 0%
- UIH, 20, 0%
- Others, 3743, 22%
Vaccination coverage rates by system, SD children 19-35 months, on 28 Feb 2015

- SD Total: 75.5% (4:3:1:3:3:1:4) vs. 80.7% (4:3:1'
- DOH Total: 69.7% (4:3:1:3:3:1:4) vs. 81.8% (4:3:1'
- I.H.S: 60.0% (4:3:1:3:3:1:4) vs. 66.7% (4:3:1'
- Health System α: 79.9% (4:3:1:3:3:1:4) vs. 84.4% (4:3:1'
- Health System β: 75.4% (4:3:1:3:3:1:4) vs. 79.6% (4:3:1'
- Health System θ: 72.1% (4:3:1:3:3:1:4) vs. 77.0% (4:3:1'

*4:3:1  ≥4 doses of DTaP, ≥3 doses of polio and ≥1 doses of MMR vaccine
*4:3:1:3:3:1:4  ≥4 DTaP, ≥3 polio, ≥1 MMR, ≥3 Hib, ≥3 HepB, ≥1 varicella and ≥4 PCV vaccine
THANK YOU

get your flu shot here!

Photo: www.pharmacyowners.com