2013-2017

NORTH DAKOTA
DEPARTMENT *of* HEALTH

Immunization Program

[Immunization Program Strategic Plan 2013 – 2017]

Maintaining and Improving Immunization Rates in North Dakota
(Updated February 2017)

Contents

Introduction:

Immunizations have greatly reduced morbidity and mortality from many diseases that previously afflicted adults and children. For example, there were about 500,000 reported cases and 500 deaths from measles each year before the measles vaccine was licensed in 1963; by 2002, only 44 cases were reported in the U.S. In recent years, more vaccinations have been developed, adding to the challenge of ensuring that all children are able to access immunization services.

The North Dakota Department of Health (NDDoH) has a strategic plan. The immunization program plays an integral role in the overall plan. The complete NDDoH Strategic Plan is available at www.ndhealth.gov/phsp/StrategicPlan.aspx.

NDDoH Vision
Protect and Enhance the Health and Safety of All North Dakotans and the Environment in Which We Live.

NDDoH Strategy
Improve the Health Status of the People of North Dakota.

NDDoH Tactic

Decrease Vaccine-Preventable Disease.

The NDDoH Immunization Program strives to serve the state of North Dakota by conducting education and support of healthcare providers providing immunizations, education of the general public, maintenance of the state immunization registry, tracking of vaccine preventable diseases, and management of the federal Vaccine for Children (VFC) Program.

North Dakota Immunization Program Vision
To ensure all North Dakotans are vaccinated and protected against vaccine preventable diseases.

North Dakota Immunization Program Mission
Continue to protect the health of North Dakotans by preventing and mitigating vaccine-preventable diseases through immunization, by managing immunization resources and immunization information systems, and by identifying and promoting evidence-based public health best practices.

Vaccine Abbreviations:

The following vaccine abbreviations will occur throughout this document.

1:1	1 Td or Tdap and 1 MCV4
1:3:2:1	1Td or Tdap, 3 Hepatitis B, 2 MMR, 1 Varicella
1:3:2:1:2	1 Td or Tdap, 3 Hepatitis B, 2 MMR, 1 MCV4, 2 Varicella
4:3:1	4 DTaP, 3 Polio, 1 MMR
4:3:1:3	4 DTaP, 3 Polio, 1 MMR, 3 Hib
4:3:1:3:3 Series	4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 Hepatitis B
4:3:1:3:3:1 Series	4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 Hepatitis B, 1 Varicella
4:3:1:3:3:1:4 Series	4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 Hepatitis B, 1 Varicella, 4 PCV
DTaP	Diphtheria, tetanus, and acellular pertussis (children)
Hib	*Haemophilus influenzae* type B
HPV	Human Papillomavirus
MCV4	Meningococcal
MMR	Measles, mumps, and rubella
PCV	Pneumococcal
Tdap	Tetanus, diphtheria, and acellular pertussis (adolescents and adults)
Varicella	Chickenpox
Zoster	Shingles

Overall Goals of the North Dakota Immunization Program: 2013 – 2018:

The North Dakota Immunization Program strives to reach or exceed Healthy People 2020 goals for immunization rates. Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For three decades, Healthy People has established benchmarks and monitored progress over time in order to:

- Encourage collaborations across communities and sectors.
- Empower individuals toward making informed health decisions.
- Measure the impact of prevention activities.

Healthy People 2020 goals for immunization and infectious diseases are rooted in evidence-based clinical and community activities and services for the prevention and treatment of infectious diseases.

Healthy People 2020 Immunization Goals for Children 19 – 35 Months	
Vaccine or Series	**Goal**
4 DTaP	90%
3 Hib	90%
3 Hepatitis B	90%
1 MMR	90%
3 Polio	90%
1 Varicella	90%
4 PCV	90%
2 Hepatitis A	85%
Hepatitis B Birth Dose	85%
2 or 3 Rotavirus	80%
4:3:1:3:3:1:4 Series	80%
Healthy People 2020 Immunization Goals for Adolescents Ages 13 – 15 Years	
Vaccine or Series	**Goal**
1 Tdap	80%
2 Varicella	90%
1 MCV4	80%
3 HPV	80%
Healthy People 2020 Immunization Goals for Kindergarten Entry	
Vaccine or Series	**Goal**
4 DTaP	95%
2 MMR	95%
3 Polio	95%
3 Hepatitis B	95%
2 Varicella	95%
Healthy People 2020 Immunization Goals for Influenza Vaccination	

Vaccine or Series	Goal
Infants 6 – 23 Months	80%
Children ages 2 – 4 Years	80%
Children ages 5 – 12 Years	80%
Children ages 13 – 17 Years	80%
Adults ages 18 – 64 Years	80%
High-Risk Adults ages 18 – 64 Years	90%
Adults ages 65 and Older	90%
Adults in Long Term Care Facilities	90%
Healthcare Personnel	90%
Pregnant Women	80%
Healthy People 2020 Immunization Goals for Pneumococcal Vaccination	
Vaccine or Series	**Goal**
Adults ages 65 and Older	90%
High-Risk Adults ages 18 – 64	60%
Adults in Long Term Care Facilities	90%
Healthy People 2020 Immunization Goals for Zoster Vaccination	
Vaccine or Series	**Goal**
Adults ages 60 and Older	30%

Current Status of Immunization Rates in North Dakota:

2015 National Immunization Survey (NIS) Data for Children 19 – 35 Months of Age

The NIS is sponsored by the National Center for Immunizations and Respiratory Diseases (NCIRD) and conducted jointly by NCIRD and the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. The NIS is a list-assisted random-digit-dialing telephone survey followed by a mailed survey to children's immunization providers that began data collection in April 1994 to monitor childhood immunization coverage.

The NIS has a sample size of about 30,000 children. However, the sample is not the entire population, and thus sample estimates and population values are likely to be different. The magnitude of the likely difference is quantified through the 95% confidence interval. For example, in 1998, the vaccination coverage estimate for 3 doses of poliovirus vaccine in Alabama was 91.4% +- 3.2%. This means that the true coverage was probably between 88.2% and 94.6%. When comparing two estimates (e.g., between states or between years), an overlap in the confidence intervals indicates that the observed difference might be due to chance.

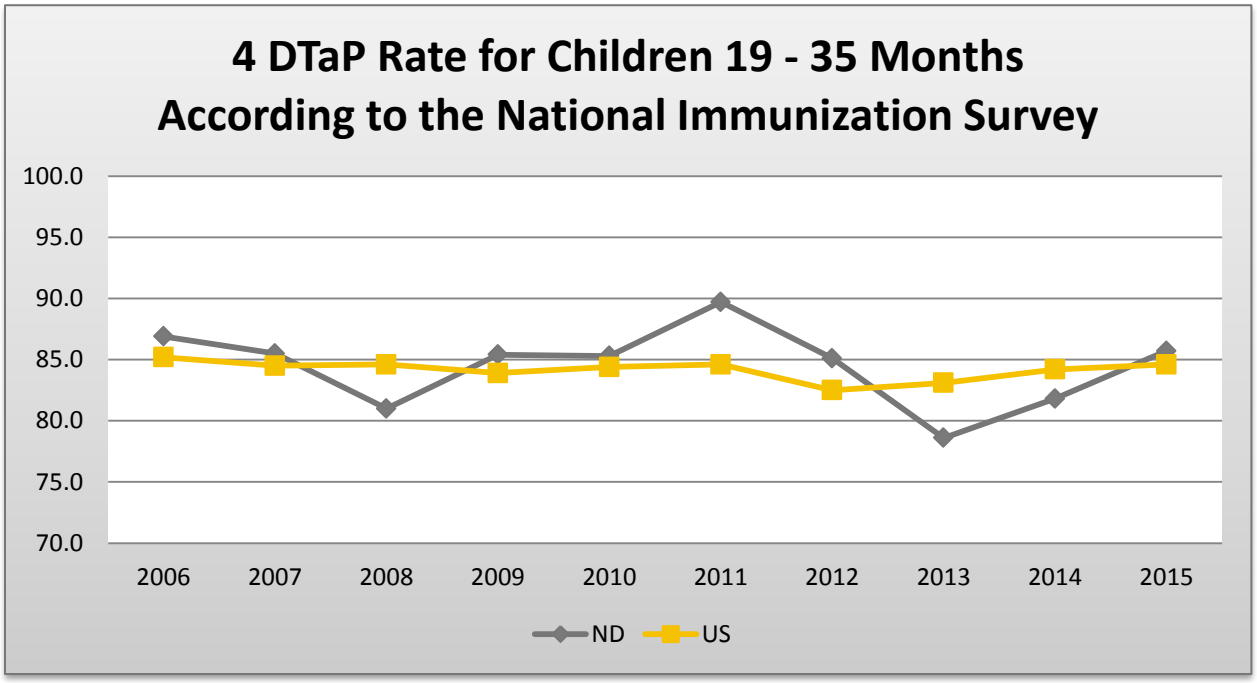
2015 NIS Data for Children 19 – 35 Months of Age*				
Vaccine or Series	North Dakota %	United States %	Healthy People 2020	Healthy People 2020 Reached

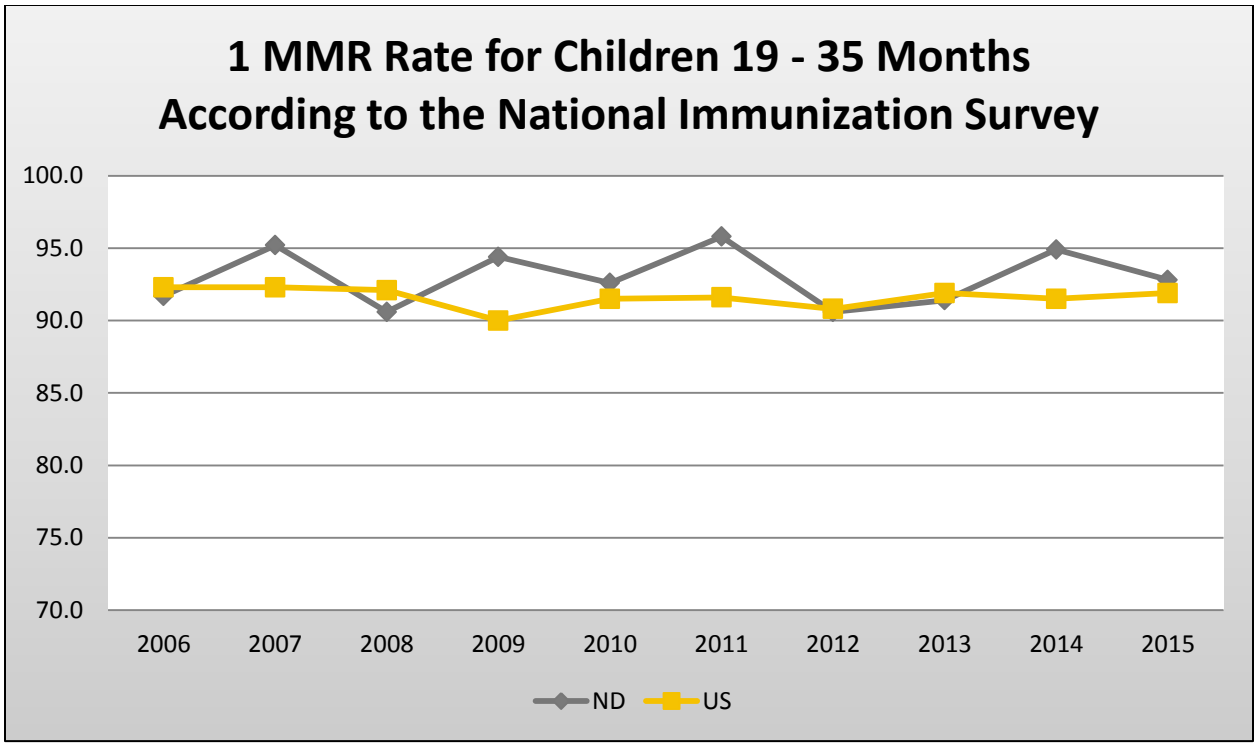
			Goal	in ND?
4 DTaP	85.7 ± 5.1	84.6 ± 1.1	90%	No
3 or 4 Hib	85.6 ± 5.1	82.7 ± 1.1	90%	No
3 Hepatitis B	96.0 ± 2.5	92.6 ± 0.7	90%	Yes
1 MMR	92.8 ± 3.8	91.9 ± 0.8	90%	Yes
3 Polio	96.7 ± 2.2	93.7 ± 0.6	90%	Yes
1 Varicella	95.3 ± 2.7	91.8 ± 0.8	90%	Yes
4 PCV	91.2 ± 4.1	84.1 ± 1.1	90%	Yes
2 Hepatitis A	66.3 ± 6.9	59.6 ± 1.5	85%	No
Hepatitis B Birth Dose	85.5 ± 5.2	73.3 ± 1.4	85%	Yes
2 or 3 Rotavirus	79.8 ± 6.2	73.2 ± 1.4	80%	No
4:3:1:3:3:1:4	80.2 ± 5.7	72.2 ± 1.4	80%	Yes

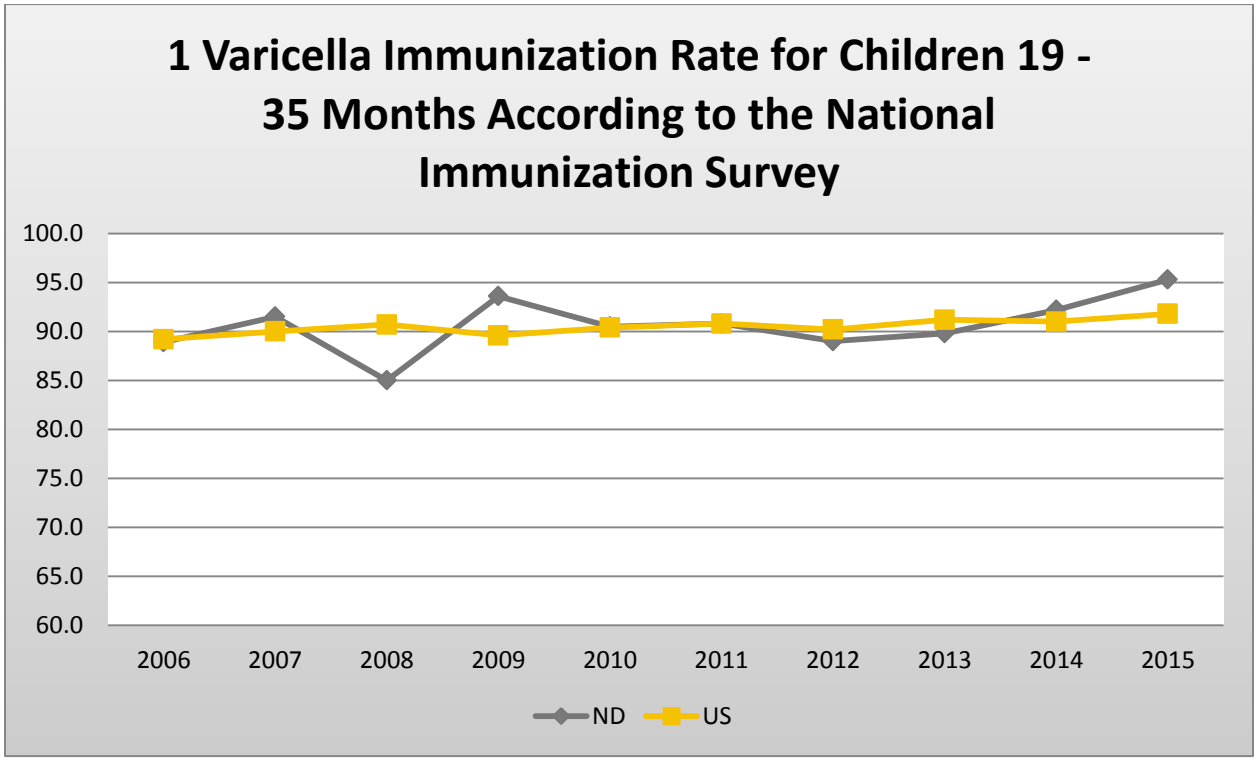
*Children were born between January 2012 and May 2014.

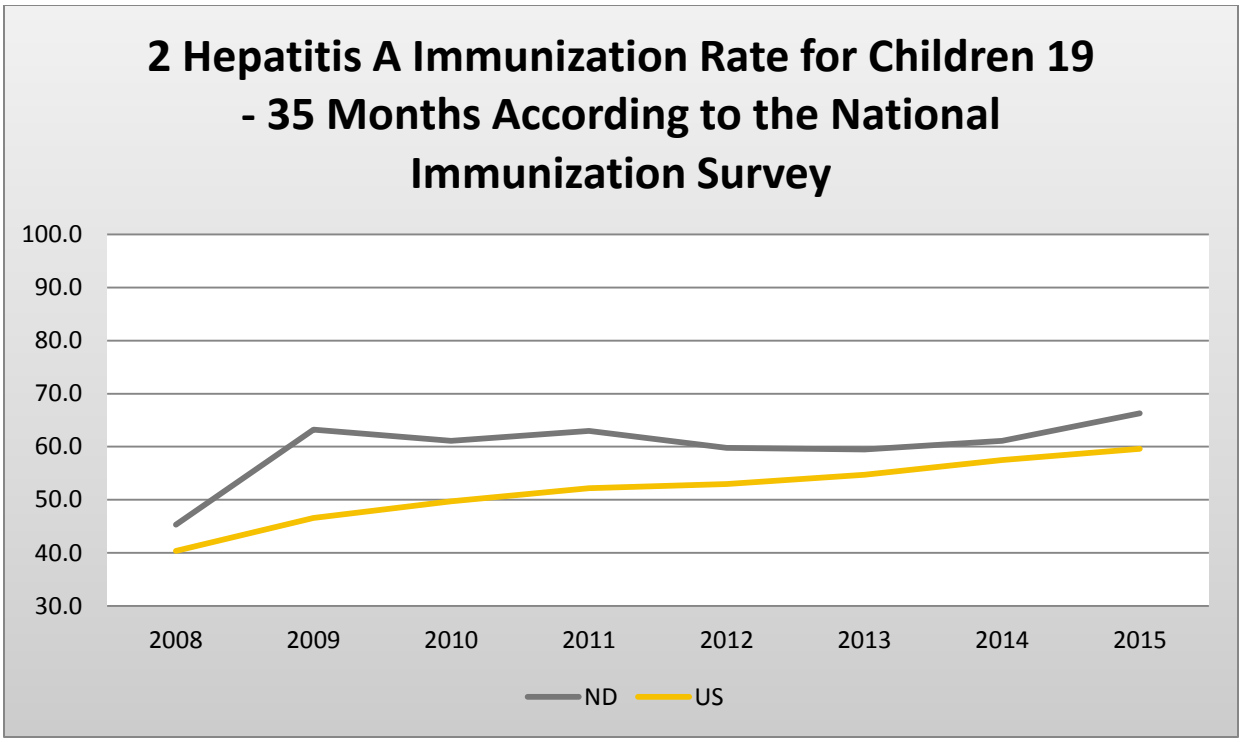
- According to the NIS, North Dakota's rates for infants ages 19 – 35 months are below the United States average for the hepatitis B series.
- According to the NIS, North Dakota's rates for infants ages 19 – 35 months are above the United States average for all other vaccines and the 4:3:1:3:3:1:4 series.
- North Dakota has met Healthy People 2020 Goals for all vaccines with the exception of DTaP, Hib, Hepatitis A, and Rotavirus.

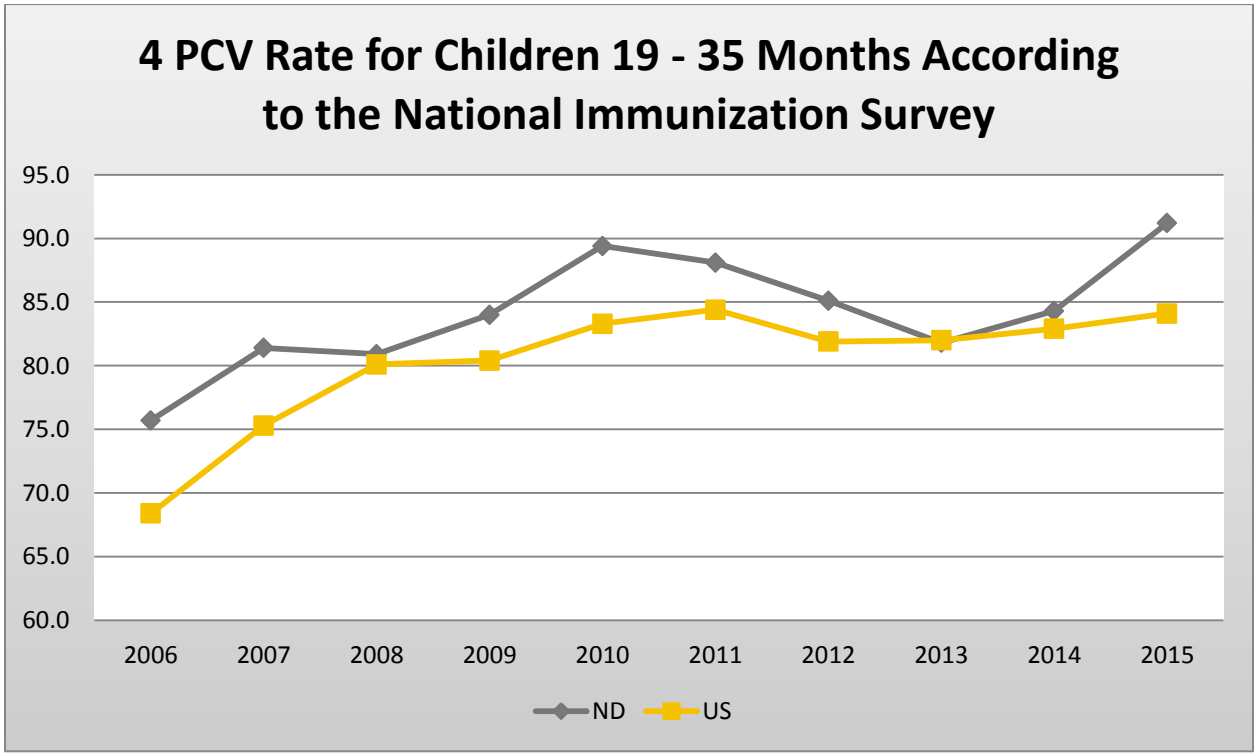
Trends in NIS Infant Data:

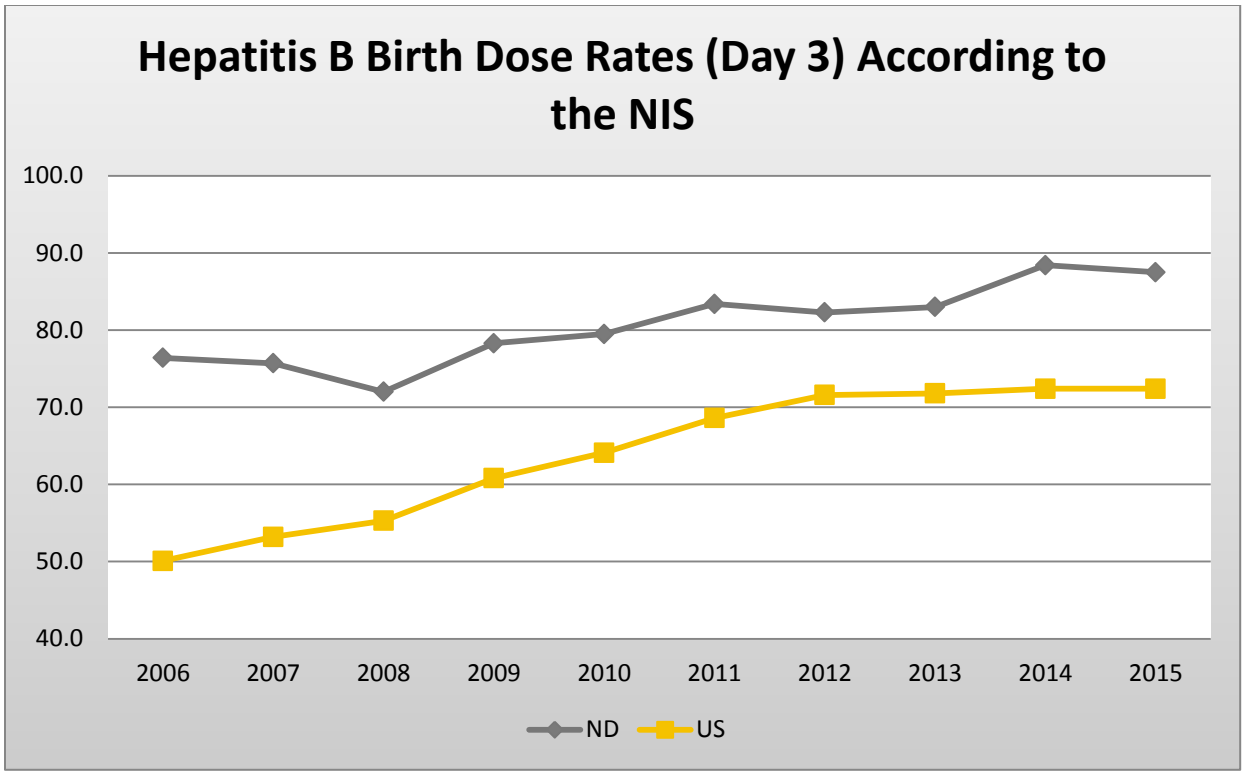


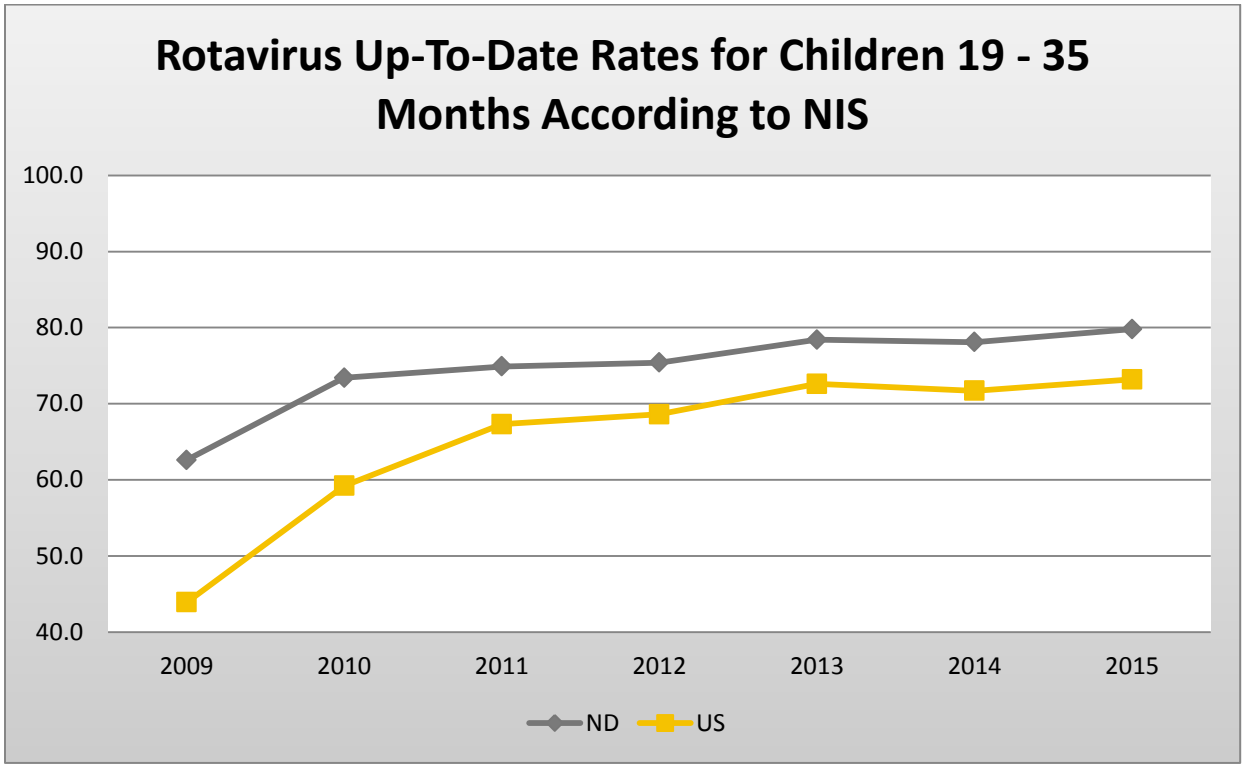

1 MMR Rate for Children 19 - 35 Months According to the National Immunization Survey
100.0
95.0
90.0
85.0
80.0
75.0
70.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
ND
US

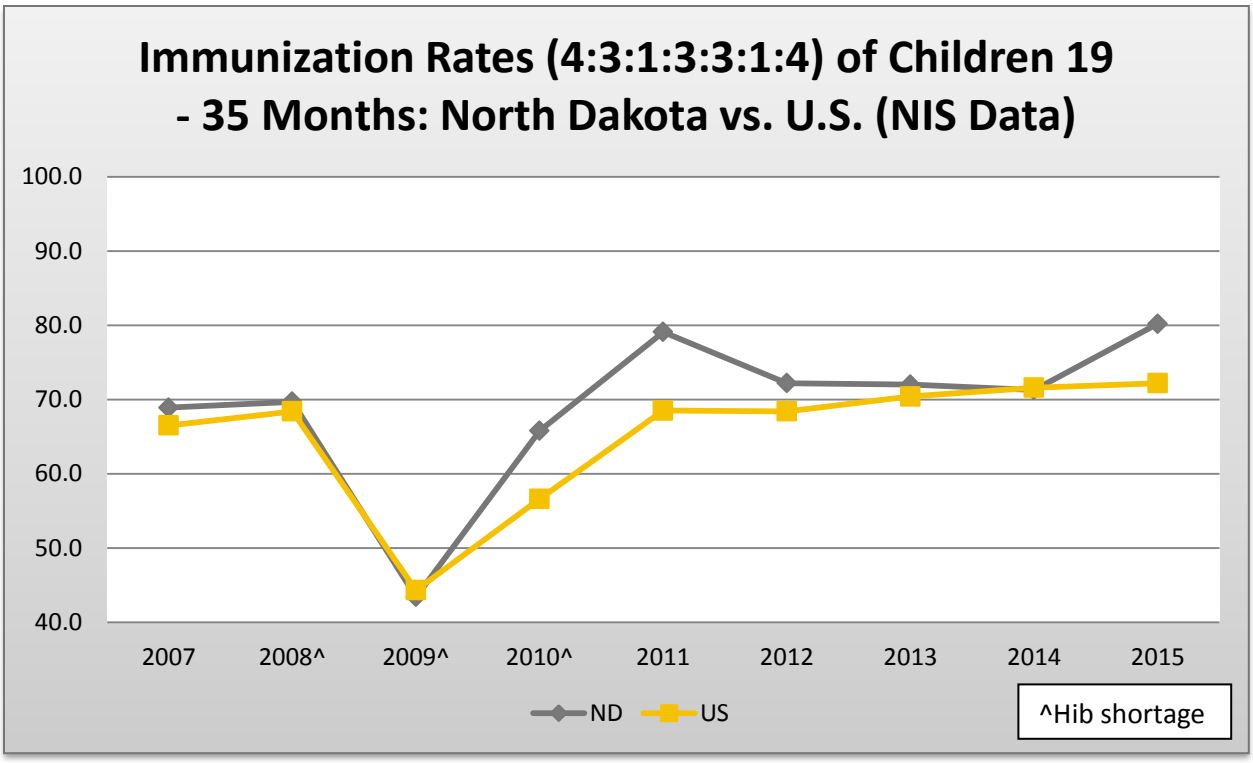

1 Varicella Immunization Rate for Children 19 - 35 Months According to the National Immunization Survey
100.0
95.0
90.0
85.0
80.0
75.0
70.0
65.0
60.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
ND
US


2 Hepatitis A Immunization Rate for Children 19 - 35 Months According to the National Immunization Survey
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
2008
2009
2010
2011
2012
2013
2014
2015
ND
US


4 PCV Rate for Children 19 - 35 Months According to the National Immunization Survey
95.0
90.0
85.0
80.0
75.0
70.0
65.0
60.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
ND
US


Hepatitis B Birth Dose Rates (Day 3) According to the NIS
100.0
90.0
80.0
70.0
60.0
50.0
40.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
ND
US


Rotavirus Up-To-Date Rates for Children 19 - 35 Months According to NIS
100.0
90.0
80.0
70.0
60.0
50.0
40.0
2009
2010
2011
2012
2013
2014
2015
ND
US



2015 NIS Data for Adolescents Ages 13 – 17

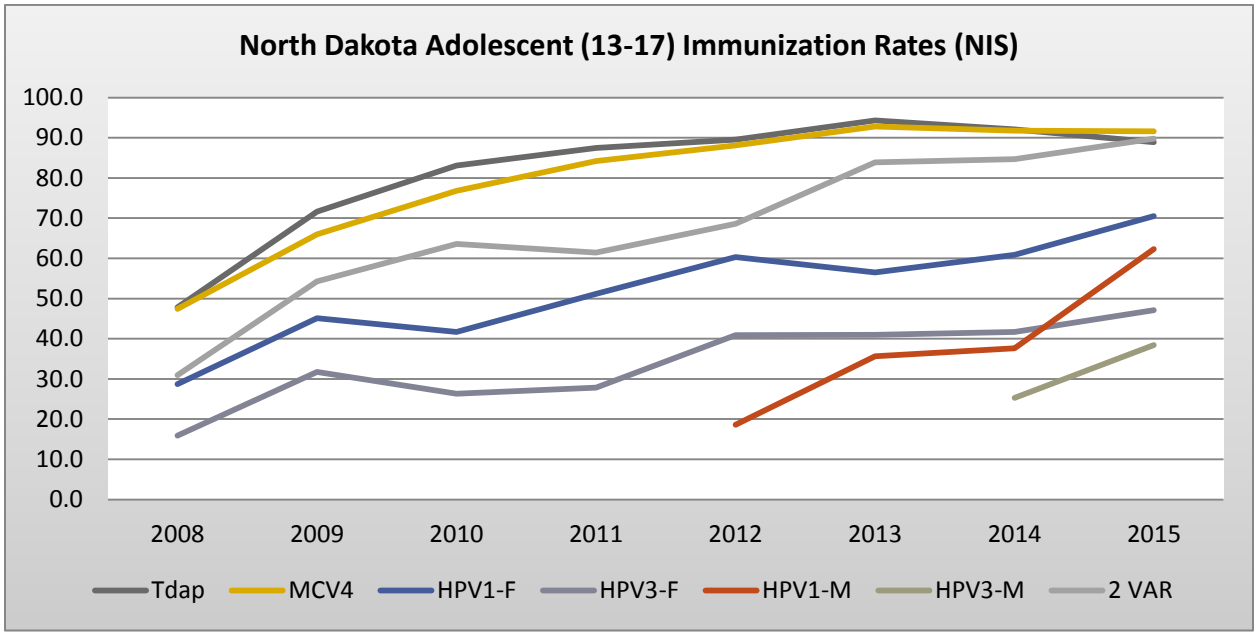
2015 NIS Data for Adolescents Ages 13 – 17*				
Vaccine or Series	**North Dakota %**	**United States %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
Tdap	88.9 ± 4.5	86.4 ± 1.0	80%	Yes
2 Varicella	89.8 ± 4.9	83.1 ± 1.1	90%	No
MCV4	91.6 ± 4.0	81.3 ± 1.0	80%	Yes
1 Dose HPV (females)	70.5 ± 8.2	62.8 ± 1.8	80%	No
3 Doses HPV (females)	47.1 ± 9.1	41.9 ± 1.8	80%	No
1 Dose HPV (males)	62.3 ± 8.9	49.8 ± 1.8	80%	No
3 Doses HPV (males)	38.4 ± 8.6	28.1 ± 1.6	80%	No

*Adolescents in the 2015 NIS-Teen were born during January 1997 - February 2003.

- According to the NIS, North Dakota's rates for adolescents ages 13 - 17 years are above average for all vaccines in comparison to the United States average for adolescent vaccines.
- North Dakota has met Healthy People 2020 Goals for Tdap and MCV4.

- Healthy People 2020 Goals have not yet been met for 2 varicella, females and males starting the HPV series, or males or females completing the HPV series.

Trends in NIS Adolescent Data



North Dakota Immunization Information System (NDIIS) Data

The North Dakota Immunization Information System (NDIIS) was established in 1988 and is a confidential, population-based, computerized information system. It is currently maintained by Blue Cross Blue Shield of North Dakota. North Dakota state law requires that immunization providers enter all childhood immunizations into the NDIIS. The NDDoH also encourages providers to enter adult immunizations as well. Children are automatically entered at birth, through a linkage with electronic birth records. The immunization program has direct access to NDIIS data through a data mart. Providers may enter directly into the NDIIS or through an electronic connection between the NDIIS and their electronic health record.

The NDIIS has high provider participation. According to the 2015 IIS Annual Report, 100% of North Dakota children ages four months through five years have two or more doses in the NDIIS. Eighty-five percent of adolescents ages 11 – 17 have two or more adolescent doses in the NDIIS. Although adult immunizations are not required to be entered into the NDIIS, 89% of adults had one or more adult doses in the NDIIS.

In a formal comparison between the NIS and NDIIS conducted in 2009 by the Centers for Disease Control and Prevention (CDC), the NDIIS showed robust data quality and highly complete vaccination records. According to the final report published in 2010 for this comparison, 74.6% of North Dakota children 19-35 months of age were up-to-date for routinely

recommended vaccinations based on both NDIIS and NIS data. NDIIS data was more complete, with 74.2% of children being up-to-date compared to only 69.8% for NIS data.

North Dakota submitted a paper for publication about using the NDIIS to determine immunization rate disparities between American Indian and white infants. In Quarter 4 2010 the immunization coverage disparity between American Indian and white children averaged 11.4% for all vaccine series. NDIIS data was published in *Public Health Reports* in 2010 for being used to calculate state-specific adolescent vaccination rates and vaccine uptake. The immunization program currently uses the NDIIS to determine immunization coverage rates for children 19-35 months by provider. Rates are calculated for various vaccines and series and then emailed to healthcare providers quarterly in an effort to encourage providers to increase rates. The immunization program uses the NDIIS to conduct recall of infants and adolescents who are 30 or more days past due for immunizations. NDIIS data is used to assess provider coverage rates for infants and adolescents for the Assessment Feedback Incentive and eXchange (AFIX) program. Providers are given their rates and a list of children missing immunizations and are asked to update data in NDIIS and MOGE children, as needed. Providers may also MOGE children as they conduct reminder/recall. MOGE functionality in NDIIS is based on the American Immunization Registry Association best practices.

One caveat to using NDIIS data to assess immunization rates statewide is that the NDIIS includes records for children who have moved out of the state. This makes the population in NDIIS larger than it actually is which brings down the immunization rate. Also, the Air Force Bases in North Dakota do not enter into the NDIIS, so children vaccinated at the Air Force Bases are included in the overall population, but show up as not vaccinated in the NDIIS, which brings down the overall immunization rate for the state. Adult data in the NDIIS has significantly improved due to interoperability between electronic medical records and the NDIIS. Adult data is still not as complete as childhood data in NDIIS. The NDIIS is useful when assessing trends in immunization rates or to determine local rates that the NIS is unable to track.

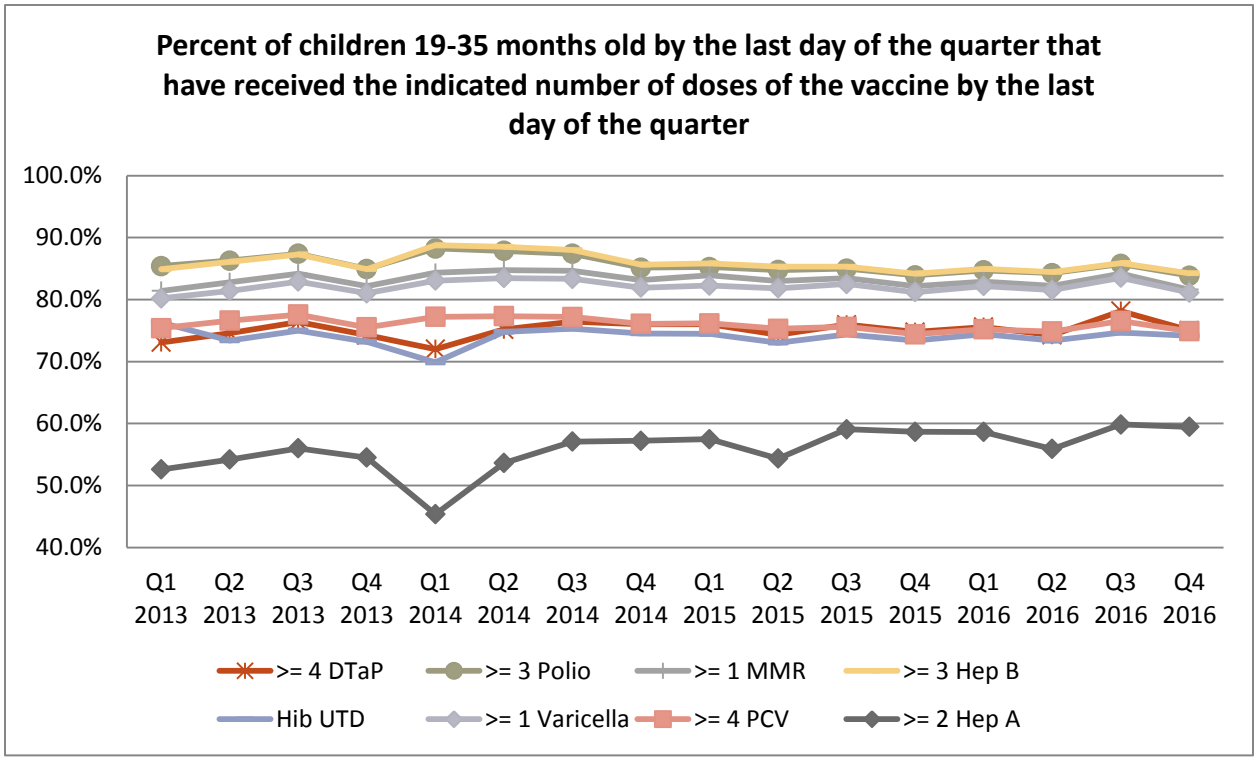
*Quarter 4 2016 NDIIS Data for Infants Ages 19 – 35 Months**

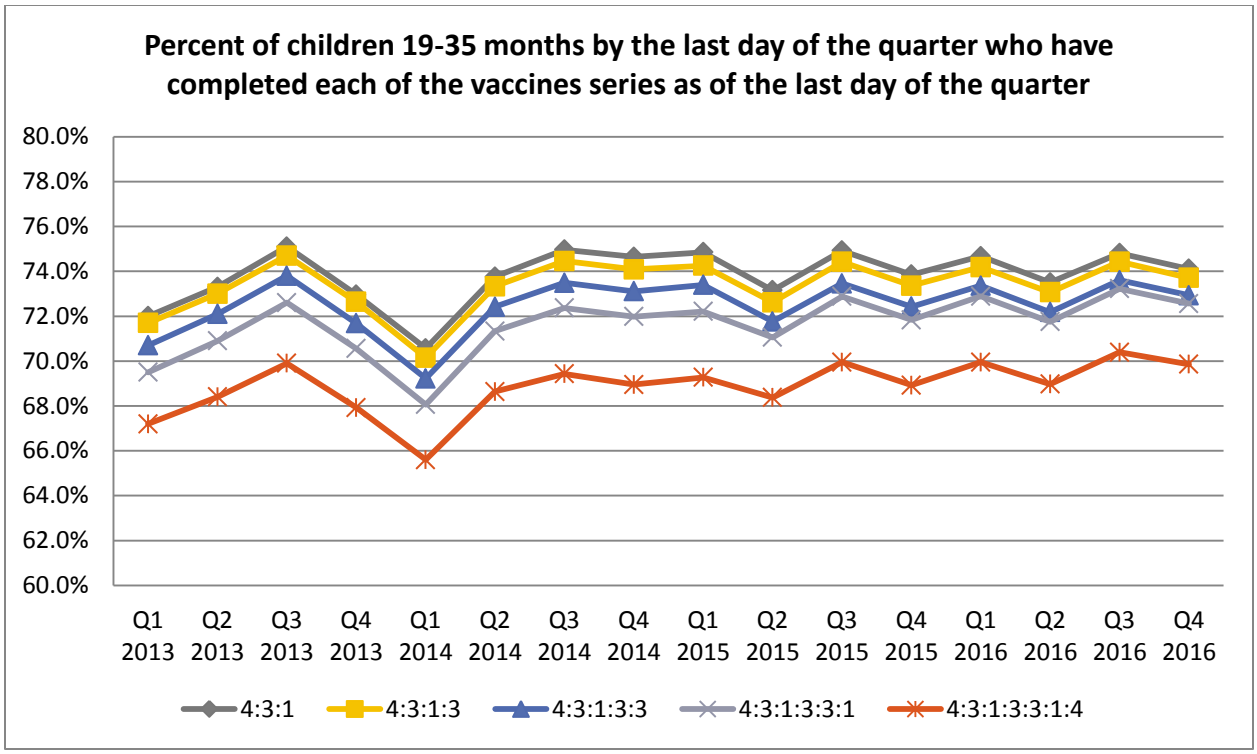
Q4 2016 NDIIS Data for Children 19 – 35 Months of Age*			
Vaccine or Series	**North Dakota %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
4 DTaP	75.0	90%	No
3 or 4 Hib	74.2	90%	No
3 Hepatitis B	84.3	90%	No
1 MMR	81.6	90%	No
3 Polio	83.9	90%	No
1 Varicella	81.1	90%	No
4 PCV	74.9	90%	No
2 Hepatitis A	59.5	85%	No
Hepatitis B Birth Dose	82.0	85%	No
4:3:1:3:3:1:4	69.9	80%	No

*Rates for Hepatitis A are for ages 24 – 35 months.

- Healthy People 2020 Goals have not yet been met for any of the infant vaccines or series according to the NDIIS.

Trends in Infants Ages 19 – 35 Months



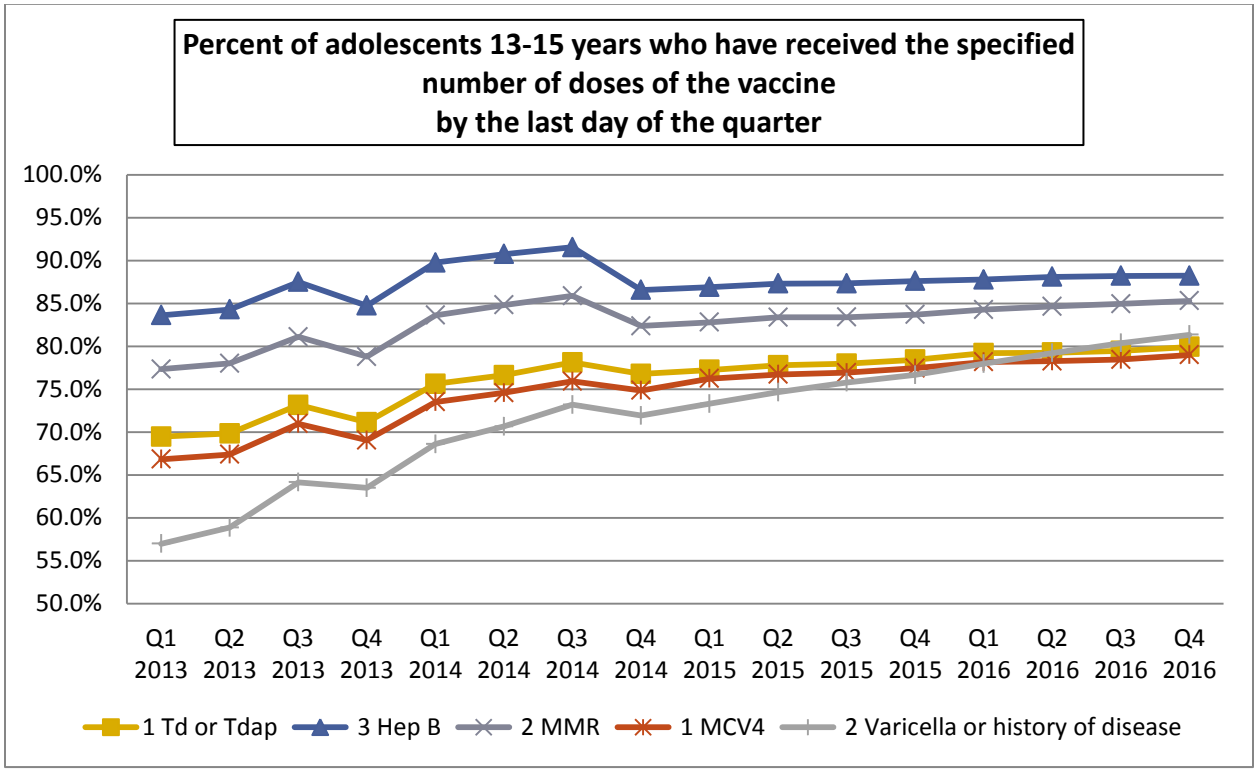


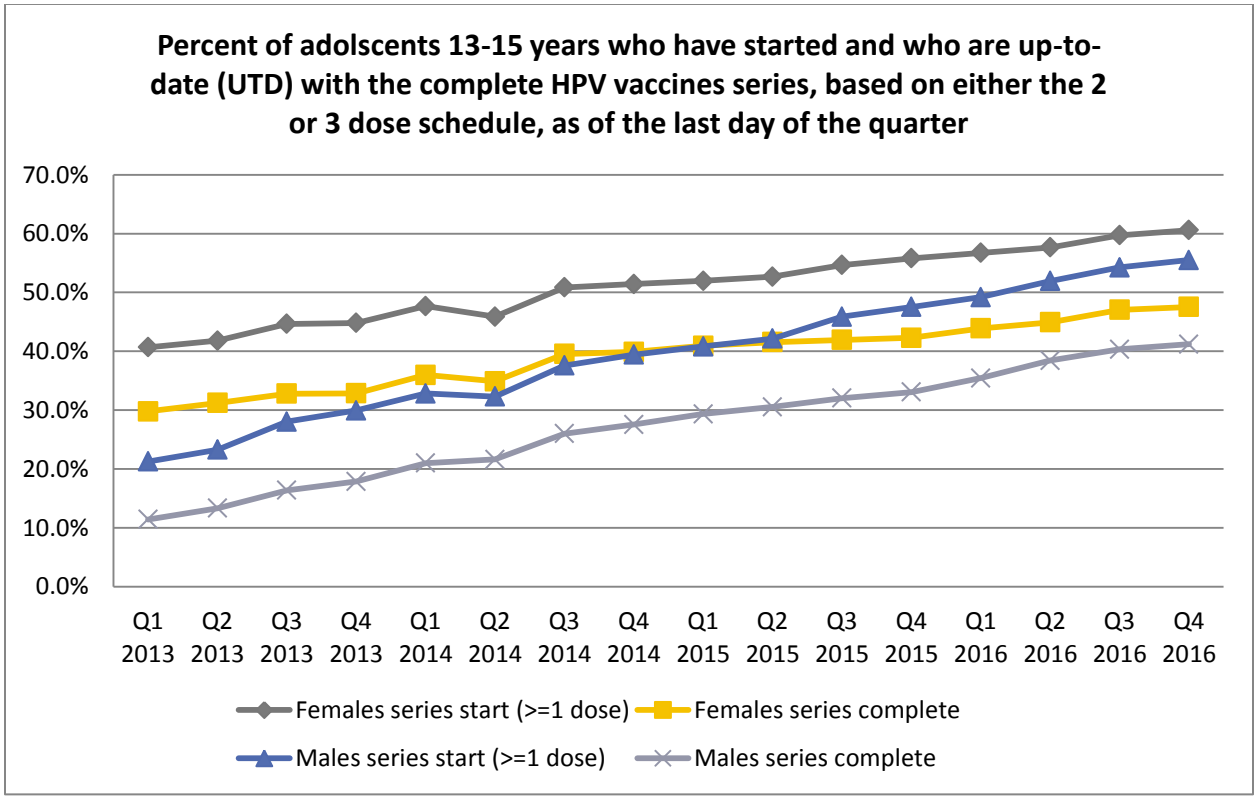
Quarter 4 2016 NDIIS Data for Adolescents Ages 13 - 15

Q4 2016 NDIIS Data for Adolescents Ages 13 – 15			
Vaccine or Series	**North Dakota %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
Tdap	78.4	80%	No
2 Varicella	76.7	90%	No
MCV4	77.4	80%	No
1 Dose HPV (females)	54.0	Not Applicable	No
3 Doses HPV (females)	34.8	80%	No
1 Dose HPV (males)	45.7	Not applicable	No
3 Doses HPV (males)	25.6	80%	NO

- Healthy People 2020 Goals have not yet been met any of the adolescent vaccines according to the NDIIS.

Trends in NDIIS Data for Adolescents Ages 13 – 15

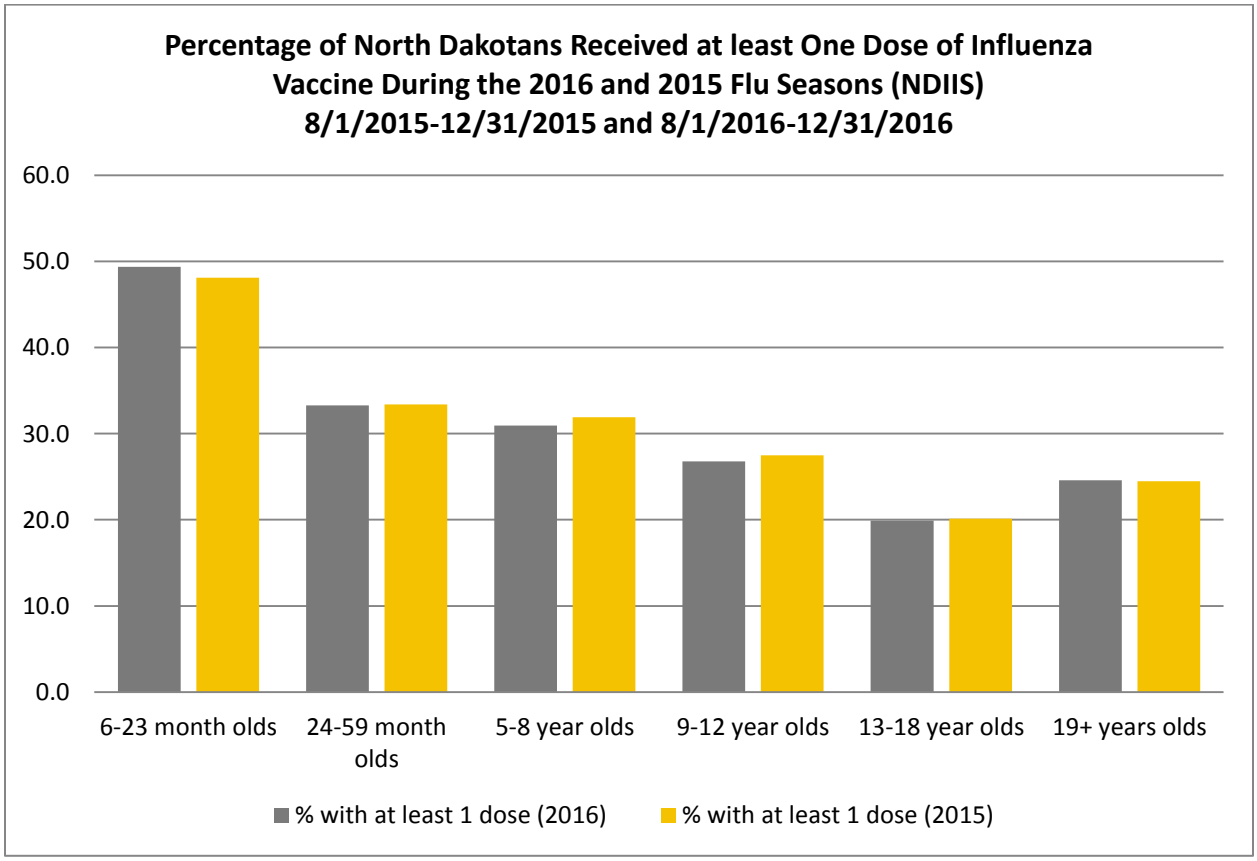




2016 – 2017 NDIIS Influenza Vaccination Rates

2016 – 2017 NDIIS Data for Influenza Vaccination of Children (Data through 12/31/16)			
Age	**North Dakota %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
6-23 Months	49.4	80%	No
24-59 Months	33.3	80%	No
5-8 Years	30.9	80%	No
9-12 Years	26.8	80%	No
13-18 Years	19.9	80%	No

- Healthy People 2020 influenza vaccination goals have not been reached in any age group.
- Children ages 6 months – 18 years are recommended to be vaccinated. Some children, ages 2 – 8, are recommended to receive two doses at least four weeks apart. The data above reflect children who have received at least one dose.



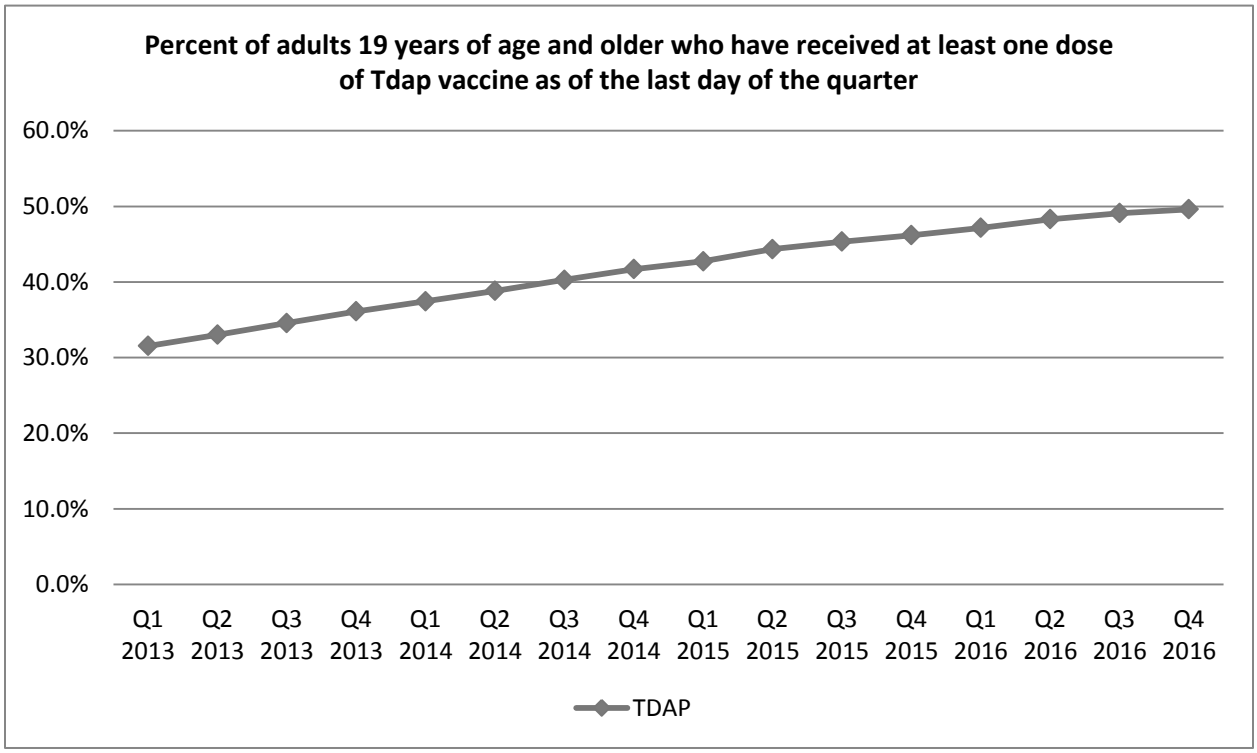
Quarter 4 2016 NDIIS Data for Adults

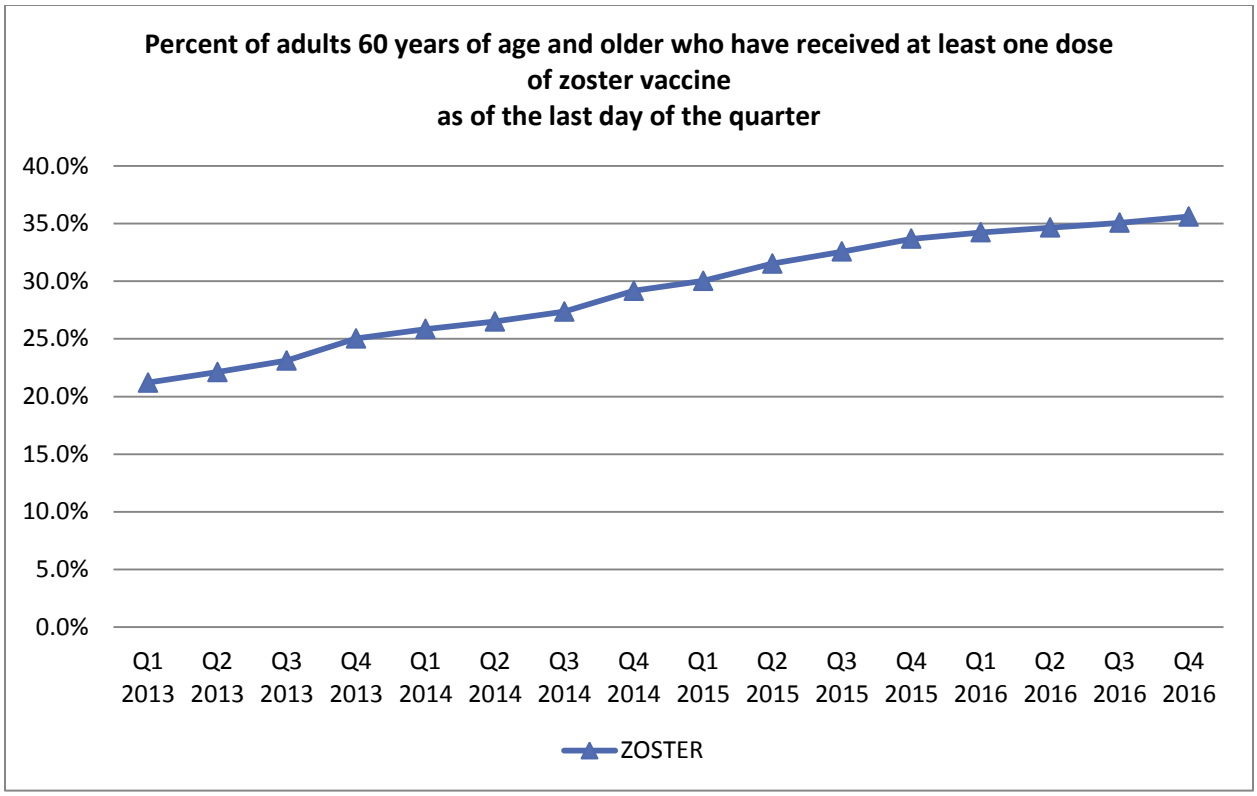
Q4 2016 NDIIS Data for Adults			
Vaccine or Series	**North Dakota %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**

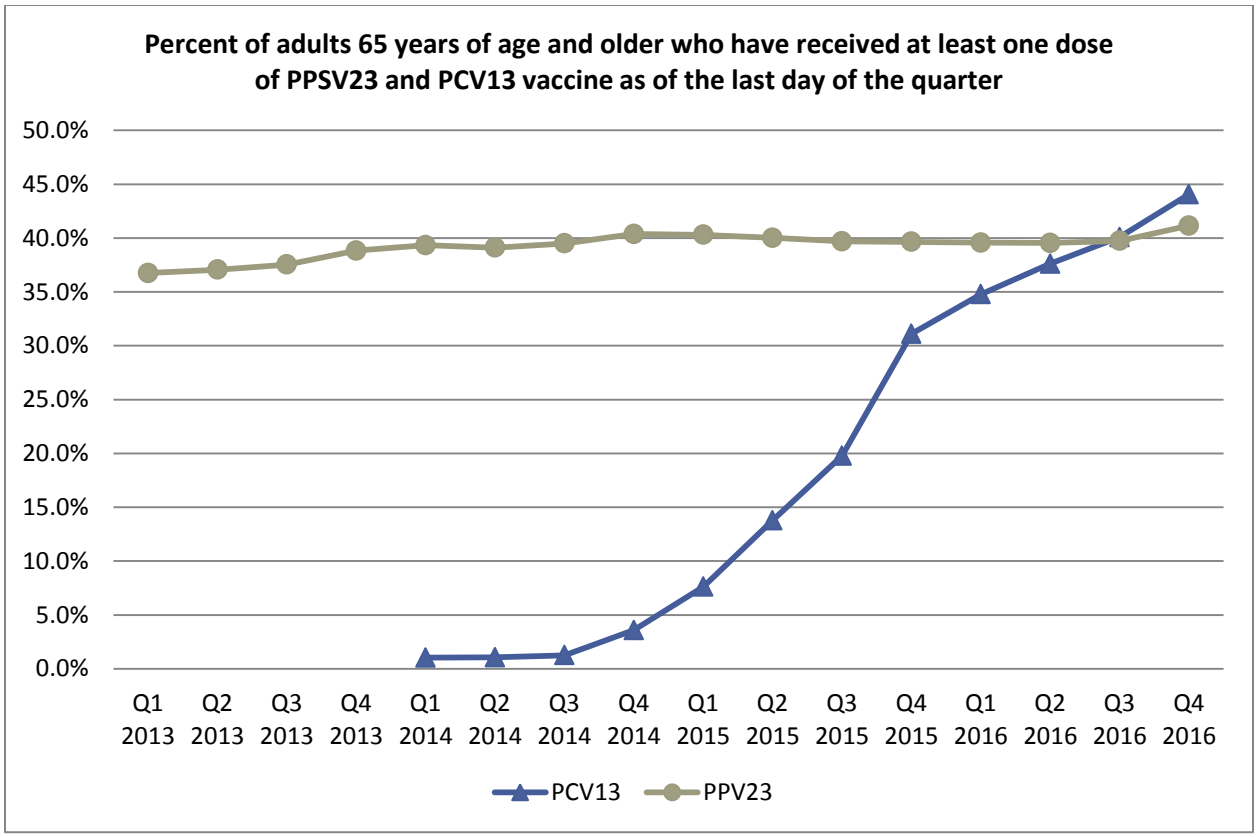
Tdap for 19 and older	49.6	Not applicable	No
Zoster for 60 and older	35.6	30%	Yes
PCV13 for 65 and older	44.1	90%	No
PPSV23 for 65 and older	41.1	90%	No

- Healthy People 2020 Goals have not yet been met for adult vaccines, with the exception of zoster.

Trends in NDIIS Adult Vaccination




Percent of adults 60 years of age and older who have received at least one dose of zoster vaccine as of the last day of the quarter
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Q1 2013
Q2 2013
Q3 2013
Q4 2013
Q1 2014
Q2 2014
Q3 2014
Q4 2014
Q1 2015
Q2 2015
Q3 2015
Q4 2015
Q1 2016
Q2 2016
Q3 2016
Q4 2016
ZOSTER


Percent of adults 65 years of age and older who have received at least one dose of PPSV23 and PCV13 vaccine as of the last day of the quarter
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Q1 2013
Q2 2013
Q3 2013
Q4 2013
Q1 2014
Q2 2014
Q3 2014
Q4 2014
Q1 2015
Q2 2015
Q3 2015
Q4 2015
Q1 2016
Q2 2016
Q3 2016
Q4 2016
PCV13
PPV23

School Immunization Coverage Assessment

North Dakota state law (23-07-17.1) requires that children be immunized prior to entry into school. All Advisory Committee on Immunization Practices (ACIP) recommendations are required for school entry, with the exception of influenza and HPV vaccines. The following table outlines North Dakota school immunization requirements.

	Number of Doses Required Per Grade		
Vaccine Type	**Kindergarten**	**Grades 1-6**	**Grades 7-12**
DTaP/DTP/DT/Tdap/Td*	5	5	5
Hepatitis B	3	3	3
IPV/OPV[†]	4	4	4
MMR	2	2	2
Varicella (Chickenpox)	2[§]	2[§]	2[§#]
Meningococcal[¶]	0	0	1
Tdap[Θ]	0	0	1

* One dose of DTaP (pediatric diphtheria, tetanus, and acellular pertussis) vaccine must have been given on or after the 4th birthday. Only four doses are necessary if the 4th dose was administered on or after the 4th birthday. Three doses of Tdap (adolescent/adult tetanus, diphtheria, and acellular pertussis)/Td are required for children ages seven or older who were not previously vaccinated. Tdap should be used as the first dose followed by two doses of Td for children age seven or older not previously vaccinated.

† For polio vaccination, in all-IPV or all-OPV schedule: one dose must have been given on or after the 4th birthday. The final dose in the series should be administered on or after the 4th birthday and at least six months after the previous dose. If four doses are administered prior to age four a 5th dose should be administered at age four through 6 years. Only three doses of IPV are required if the 3rd dose is given on or after the 4th birthday.

§ For the 2016-17 school year, two doses of varicella vaccine are required for kindergarten through eighth grade. If a child has a reliable history of chickenpox disease, the child is exempt from the vaccine requirement.

For the 2016-17 school year, one dose of varicella vaccine is required of children attending ninth through twelfth grade. If a child has a reliable history of chickenpox disease, the child is exempt from the vaccine requirement.

¶ One dose of meningococcal conjugate vaccine (MCV4) is required for entrance into the seventh grade. One dose of MCV4 must have been given on or after the 10th birthday.

ϴ One dose of Tdap vaccine is required for entrance into the seventh grade. One dose of Tdap must have been given on or after the 7th birthday.

Exemptions

Students may be exempt from immunization requirements for the following reasons:

- **Medical Exemption:** Requires a certificate signed by a licensed physician stating that the physical condition of the child is such that immunization would endanger the life or health of the child.
- **Philosophical, Moral or Religious Belief Exemption:** Requires a certificate signed by the parent or guardian whose sincerely held philosophical, moral or religious belief is opposed to such immunization.
- **History of Disease Exemption:** Requires a certificate signed by the parent or guardian or physician stating that the child has a reliable history of chickenpox disease.

The annual school immunization survey is completed by all private and public schools in North Dakota. Schools are required to report immunization data to the NDDoH. The survey gathers data on the number of students, grades kindergarten through 12, who are up-to-date with the required immunizations. The NDDoH validates school immunization survey data by obtaining a random sample of schools records and comparing that sample to overall data. One limitation of school immunization data is that data is not updated if a child receives vaccinations after the survey is due.

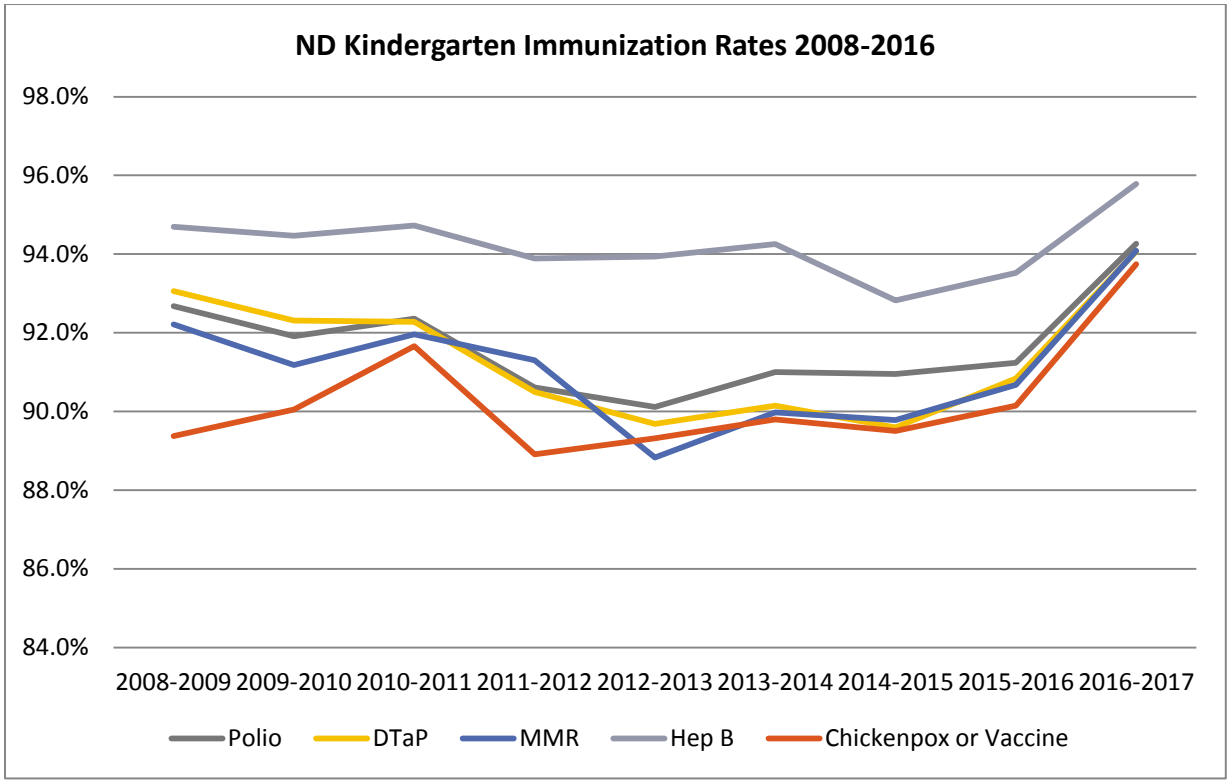
2016 - 2017 School Immunization Coverage Assessment – Kindergarten Entry				
Vaccine	**North Dakota %**	**United States (Median) % during 2015 – 2016**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
5 DTaP	93.54	94.2	95%	No
4 Polio	94.03	94.7	95%	No
2 MMR	94.03	94.6	95%	No
3 Hepatitis B	95.01	95.8	95%	Yes
2 Varicella	94.42	94.3	95%	No

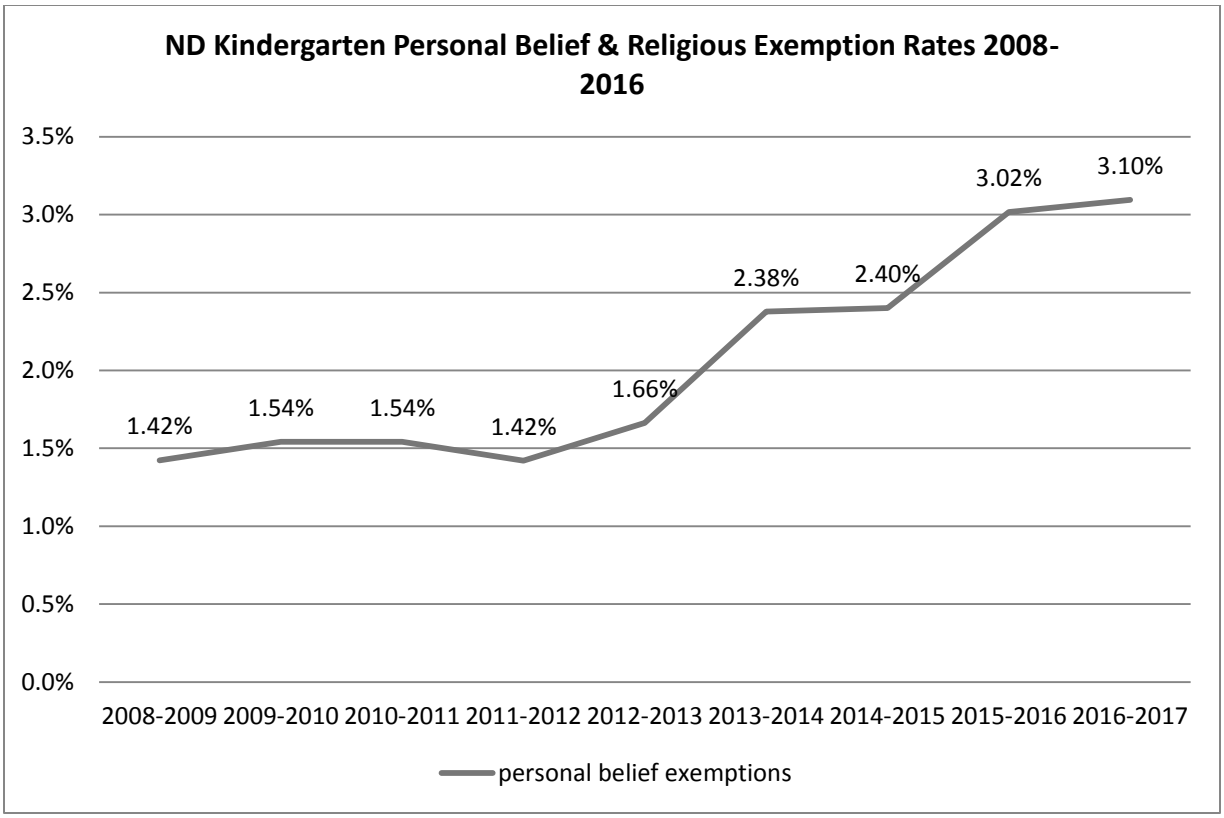
- According to the North Dakota school immunization survey, rates for kindergarten entry for vaccines are below the United States median, with the exception of varicella vaccine.

- Healthy People 2020 Goals have not yet been met in North Dakota for the required vaccines for kindergarten entry, with the exception of hepatitis B.

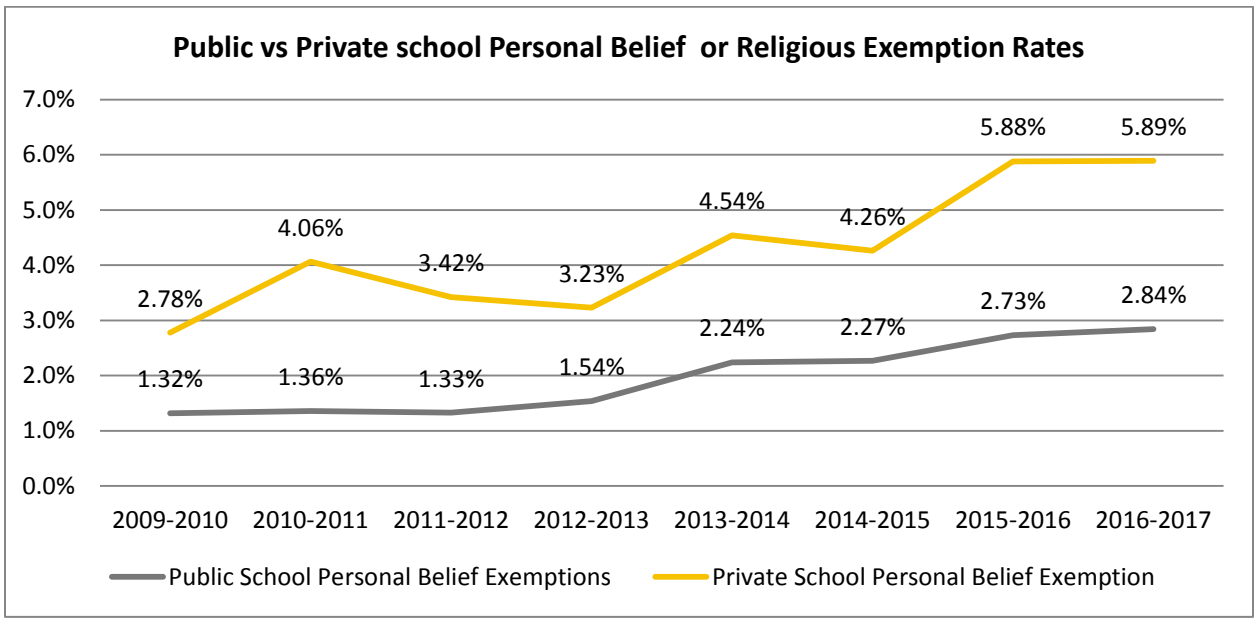
2016 – 2017 School Immunization Coverage Assessment – Middle School Entry				
Vaccine	**North Dakota %**	**United States (Median) %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
4 Polio	97.10	No Data Available	Not Applicable	Not Applicable
2 MMR	97.27	No Data Available	Not Applicable	Not Applicable
3 Hepatitis B	97.42	No Data Available	Not Applicable	Not Applicable
2 Varicella	97.42	No Data Available	Not Applicable	Not Applicable
1 Tdap	91.34	No Data Available	Not Applicable	Not Applicable
1 MCV4	90.49	No Data Available	Not Applicable	Not Applicable

Trends in School Immunization Rates

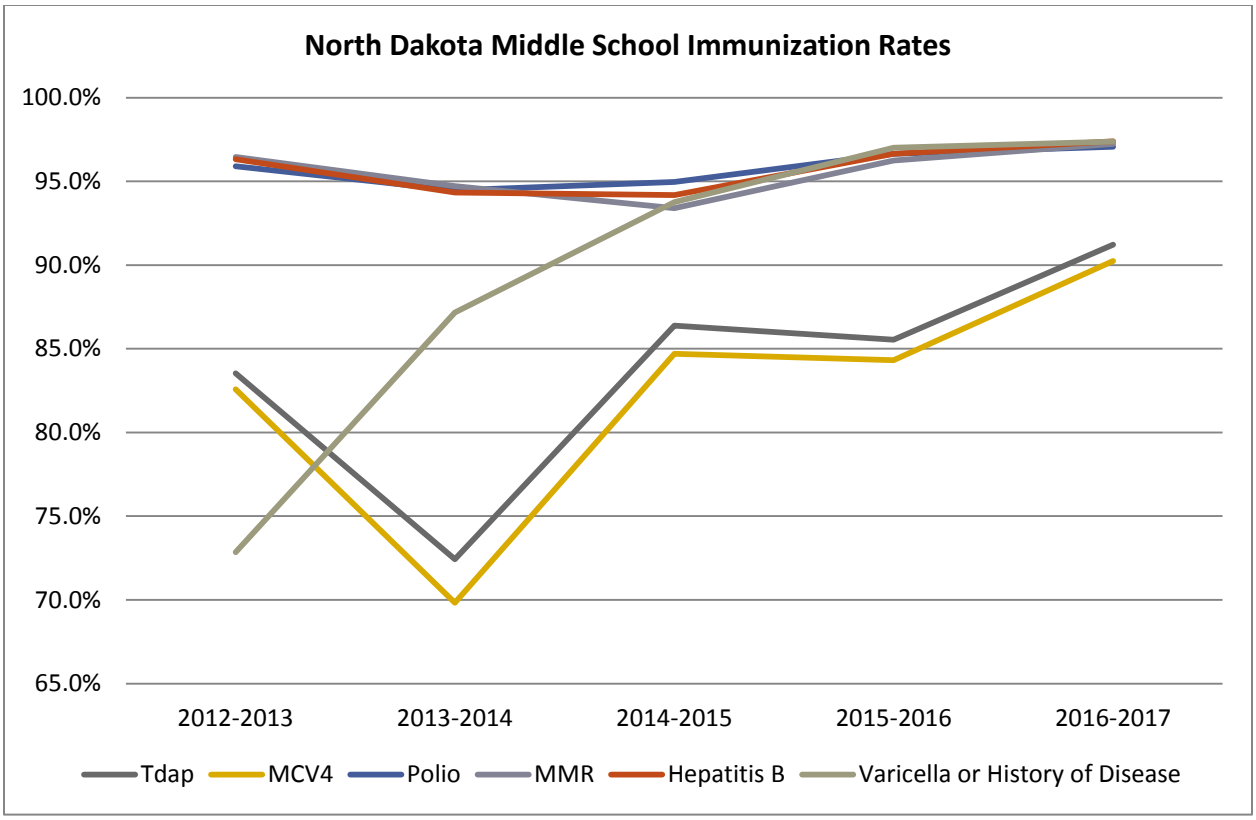




- As shown in the graph above, exemption rates have increased each year in North Dakota.



- Exemption rates are higher in children attending private schools in North Dakota in comparison to those attending public school.



- Middle school entry rates for newly required (2008) immunizations, Tdap, MCV4, varicella, are lower than for those vaccines that have been required for many years.

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based system of health surveys that collects information by telephone on health risk behaviors, preventive health practices, and health care access primarily related to chronic disease and injury. For many states, the BRFSS is the only available source of timely, accurate data on health-related behaviors.

BRFSS was established in 1984 by the Centers for Disease Control and Prevention (CDC); currently data are collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. More than 350,000 adults are interviewed each year, making the BRFSS the largest telephone health survey in the world. States use BRFSS data to identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs. Many states also use BRFSS data to support health-related legislative efforts.

Sampling yields results that are an estimate of the true answer for the entire population. Survey response rates also may affect the potential for bias in the data. The reliability of a prevalence estimate depends on the actual, unweighted number of respondents in a category or

demographic subgroup (not a weighted number). Interpreting and reporting weighted numbers that are based on a small, unweighted number of respondents can be misleading. The degree of precision increases if the sample size is larger and decreases if the sample size is smaller. In some cases, the estimate may become too uncertain to be of value.

The BRFSS uses telephone interviewing for several reasons. Telephone interviews are faster and less expensive than face to face interviews. The one main limitation of any telephone survey is that those people without phones cannot be reached and are not represented. Since phone ownership is highly correlated to income, persons without a phone are more likely to have low incomes than persons with a telephone. This potentially will affect questions with responses that are highly dependent on income (e.g., health insurance) more than other questions. In addition, because the questionnaire is asked in English in North Dakota, adults who are not able to be interviewed in English are not included in the sample. As a result, BRFSS findings only can be generalized to English speaking adults living in households with telephones. However, because phone ownership is high in North Dakota (greater than 95 percent), it is unlikely that failing to reach these persons will substantially alter results. National BRFSS results correspond well with findings from other surveys conducted in person.

The BRFSS relies on information reported directly by the respondent. As such, this self-reported data may be subject to a number of sources of possible error. How questions are worded may influence responses in a certain way and can result in what is called "measurement error." Similarly, the ability of individuals to accurately recall details is subject to "response error."

Not all the questions used in the survey have been tested to ensure that all persons understand the intended meaning. Furthermore, not all questions are equally easy for respondents to answer. While it may be easy for a respondent to provide a personal opinion, it may be much harder to recall a past event (last mammogram) or provide factual information (household income).

Interviewers are trained and monitored to ensure that they administer the survey in a neutral voice and read the written question verbatim and without comment. Nonetheless, it is possible for the interviewer to bias the results through tone of voice or administration technique. Coding errors also may occur if the interviewer types in the wrong response to the question. In addition, the person being interviewed may alter his or her response to give the interviewer the most socially acceptable answer. This may be a problem especially for questions that may have a perceived stigma (e.g., HIV risk).

The bias from non-response cannot be removed and it is not possible to know if those who refused to respond would have answered the questions in approximately the same ways as those who responded.

Personal characteristics that are presented are univariate (i.e., examine each risk factor in relationship to only one characteristic at a time); however, the complexity of health associations are not fully represented by examining single relationships. For example, an examination of heart disease and employment status might show a greater prevalence of heart disease among persons who are retired than among persons who are employed. However,

persons who are retired are expected to have a greater average age than persons who are employed; consequently, this relationship might entirely disappear if we removed the effects of age. (If this were the case, we would say that the relationship between heart disease and employment status was being confounded by age.)

Likewise, data does not attempt to explain the causes of the health effects examined. For instance, BRFSS data might show a higher prevalence of heart disease among smokers, but one should not conclude from this that smoking causes heart disease. That smoking is indeed a causal factor for heart disease is apparent from a large body of scientific data, but that is not a conclusion that can be drawn from a cross-sectional survey such as this. Rather this is a "snapshot" of disease, risk factors and population characteristics for adult residents of North Dakota at a point in time.

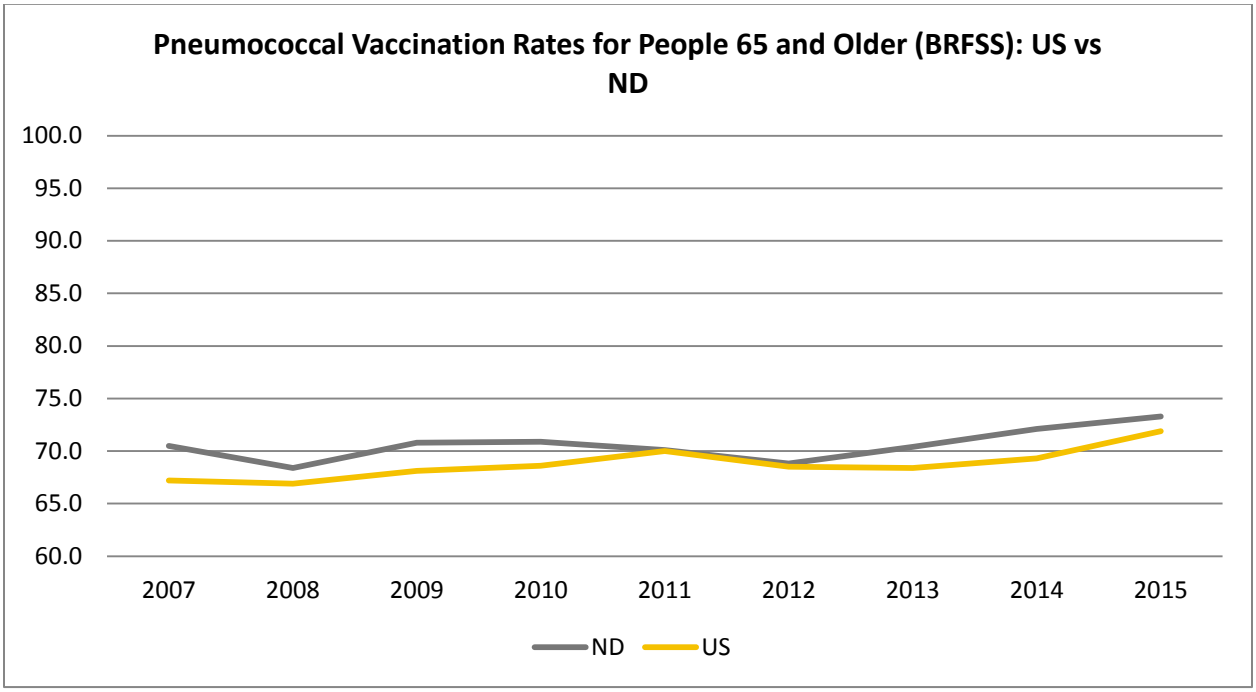
Adult immunization coverage rates are posted on CDC's website at http://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/.

BRFSS Pneumococcal Immunization Coverage Data

2015 BRFSS Pneumococcal Immunization Coverage Data				
Vaccine	**North Dakota %**	**United States %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
Pneumococcal for 65 and older	73.3	71.9	90	No
Pneumococcal for 18 – 64 High Risk	34.3	33.5	60	No

- According to the BRFSS, North Dakota rates for pneumococcal vaccination are above the national average.
- Healthy People 2020 Goals have not yet been met for pneumococcal vaccination for adults ages 65 and older or for high-risk adults younger than 65.

Trends in BRFSS Pneumococcal Immunization Coverage Data



BRFSS Zoster Immunization Coverage Data

2014 BRFSS Zoster Immunization Coverage Data				
Vaccine	**North Dakota %**	**United States %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
Zoster for 65 and older	46.9	35.9	30	Yes

- According to the BRFSS, North Dakota rates for zoster vaccination are above the national average.
- Healthy People 2020 Goals have been met for zoster vaccination for adults ages 65 and older.

BRFSS Tdap Immunization Coverage Data

2013 BRFSS Tdap Immunization Coverage Data				
Vaccine	**North Dakota %**	**United States %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
Tdap for 18 and older	68.6	57.5	Not Applicable	Not Applicable
Tdap for 65 and older	56.9	48.9	Not Applicable	Not Applicable

- According to the BRFSS, North Dakota rates for Tdap vaccination are above the national average.

CDC Influenza Vaccination Coverage Data

The ACIP recommends annual influenza vaccination of everyone six months and older. The vaccine is also recommended for certain people who are at higher risk for complications due to influenza, including young children, people with chronic medical conditions, people 50 and older, and pregnant women. People who are in close contact with people at higher risk for complications due to influenza (healthcare workers) are also recommended to be vaccinated.

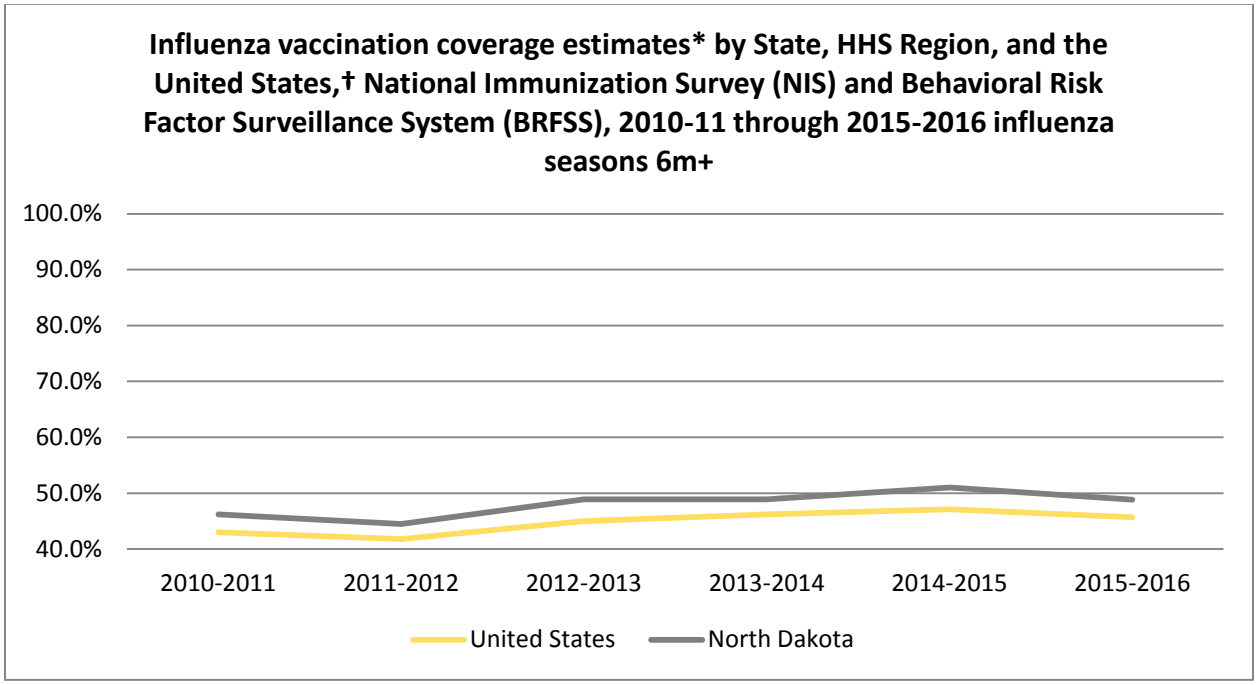
CDC utilizes the NIS and BRFSS to estimate influenza vaccination coverage. Coverage rates are posted on CDC's website at http://www.cdc.gov/flu/fluvaxview/.

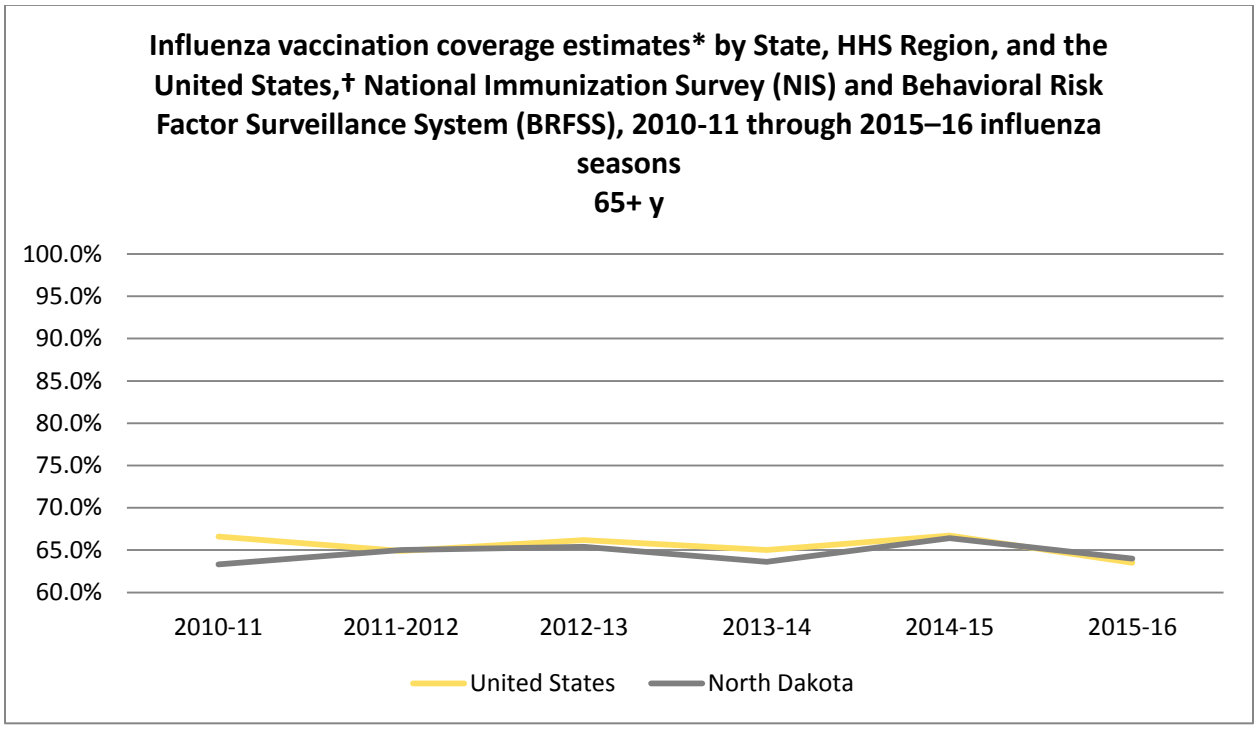
2015 – 2016 CDC Influenza Vaccination Coverage Data				
Vaccine	**North Dakota %**	**United States %**	**Healthy People 2020 Goal**	**Healthy People 2020 Reached in ND?**
6 months and older	48.8	45.6	80%	No
6 months – 17 years	63.4	59.3	80%	No
6 months – 4 years	78.0	70.0	80%	No
5 – 12 years	64.1	61.8	80%	No
13 – 17 years	51.8	46.8	80%	No
18 and older	44.9	41.7	80%	No
18 – 64 years	40.5	36.3	80%	No
High-Risk* 18 – 64 years	49.3	46.0	90%	No
50 – 64 years	46.7	43.6	80%	No
65 and older	64.0	63.4	90%	No
6 months and older (other race)**	52.2	47.1	80%	No
Health Care Personnel	90.1	86.4	90%	Yes

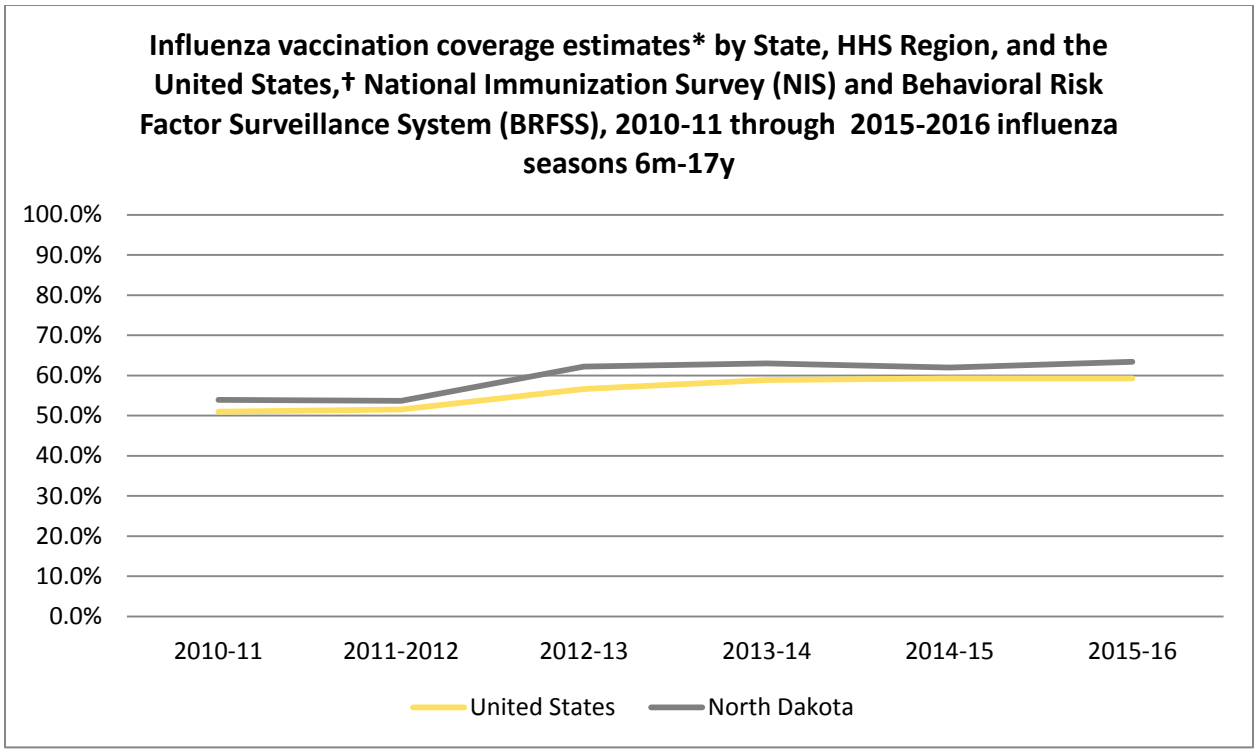
* Selected high-risk conditions. Includes people with asthma, diabetes or heart disease.
** Includes Asians, American Indians and Alaska Natives, Native Hawaiian or other Pacific Islander, multiracial, and other races.

- As shown in the table above, rates of influenza vaccination in North Dakota for all age groups and high-risk categories have not met Healthy People 2020 goals, with the exception of health care personnel.
- Influenza vaccination rates for all age groups are above the national average.

Trends in CDC Influenza Immunization Coverage Data







Review of North Dakota's Current Status of Meeting Healthy People 2020 Immunization Goals:

Healthy People 2020 Immunization Goals for Children 19 – 35 Months				
Vaccine or Series	**Goal**	**ND**	**Source**	**Healthy People 2020 Reached in ND?**
4 DTaP	90%	85.7 ± 5.1	NIS	No
3 Hib	90%	85.6 ± 5.1	NIS	No
3 Hepatitis B	90%	96.0 ± 2.5	NIS	Yes
1 MMR	90%	92.8 ± 3.8	NIS	Yes
3 Polio	90%	96.7 ± 2.2	NIS	Yes
1 Varicella	90%	95.3 ± 2.7	NIS	Yes
4 PCV	90%	91.2 ± 4.1	NIS	Yes
2 Hepatitis A	85%	66.3 ± 6.9	NIS	No
Hepatitis B Birth Dose	85%	85.5 ± 5.2	NIS	Yes
2 or 3 Rotavirus	80%	79.8 ± 6.2	NIS	No
4:3:1:3:3:1:4 Series	80%	80.2 ± 5.7	NIS	Yes
Healthy People 2020 Immunization Goals for Adolescents Ages 13 – 15 Years				

Vaccine or Series	Goal	ND	Source	Healthy People 2020 Reached in ND?
1 Tdap	80%	88.9 ± 4.5	NIS	Yes
2 Varicella	90%	89.8 ± 4.9	NIS	No
1 MCV4	80%	91.6 ± 4.0	NIS	Yes
3 HPV (females)	80%	47.1 ± 9.1	NIS	No
3 HPV (males)	80%	38.4 ± 78.6	NIS	No
Healthy People 2020 Immunization Goals for Kindergarten Entry				
Vaccine or Series	**Goal**	**ND**	**Source**	**Healthy People 2020 Reached in ND?**
4 DTaP	95%	93.54	School Survey	No
2 MMR	95%	94.03	School Survey	No
3 Polio	95%	94.03	School Survey	No
3 Hepatitis B	95%	95.01	School Survey	Yes
2 Varicella	95%	94.42	School Survey	No
Healthy People 2020 Immunization Goals for Influenza Vaccination				
Vaccine or Series	**Goal**	**ND**	**Source**	**Healthy People 2020 Reached in ND?**
Infants 6 months – 4 years	80%	78.0	NIS	No
Children ages 5 – 12 Years	80%	64.1	NIS	No
Children ages 13 – 17 Years	80%	51.8	NIS	No
Adults ages 18 – 64 Years	80%	40.5	BRFSS	No
High-Risk Adults ages 18 – 64 Years	90%	49.3	BRFSS	No
Adults ages 65 and Older	90%	64.0	BRFSS	No
Healthcare Personnel	90%	90.1	CDC	Yes
Healthy People 2020 Immunization Goals for Pneumococcal Vaccination				
Vaccine or Series	**Goal**	**ND**	**Source**	**Healthy People 2020 Reached in ND?**
Adults ages 65 and	90%	73.3	BRFSS	No

Older				
High-Risk Adults ages 18 – 64	60%	34.3	BRFSS	No*
Healthy People 2020 Immunization Goals for Zoster Vaccination				
Vaccine or Series	**Goal**	**ND**	**Source**	**Healthy People 2020 Reached in ND?**
Adults ages 60 and Older	30%	46.9	BRFSS	Yes

Resources:

The North Dakota Immunization Program is 100% federally funded. Strategies for maintaining or increasing immunization rates are dependent on level or increased federal funding.

Strategies for Maintaining or Increasing Immunization Rates in North Dakota:

The following strategies are based on the Guide to Community Preventive Services: Vaccination, which may be found at www.thecommunityguide.org/vaccines/index.html. This website is the official collection of all Community Preventive Services Task Force findings and the systematic reviews on which they are based.

The Community Guide is a credible resource with many uses because it is based on a scientific systematic review process and answers questions critical to almost everyone interested in community health and well-being such as:

- What interventions have and have not worked?
- In which populations and settings has the intervention worked or not worked?
- What might the intervention cost? What should I expect for my investment?
- Does the intervention lead to any other benefits or harms?
- What interventions need more research before we know if they work or not

Reminder/Recall

Client reminder and recall interventions involve reminding members of a target population that vaccinations are due (reminders) or late (recall). Reminders and recalls differ in content and are delivered by various methods—telephone, letter, postcard, or other. Most reminder systems involve a specific notification for a specific client, and may be accompanied by educational messages regarding the importance of immunization for the targeted vaccine(s).

Client reminder and recall interventions are recommended based on strong evidence of effectiveness in improving vaccination coverage: (1) in children and adults; (2) in a range of settings and populations; (3) when applied at different levels of scale—from individual practice settings to entire communities; (4) across a range of intervention characteristics (e.g., reminder or recall, content, theoretical basis and method of delivery); and (5) whether used alone or with additional components.

Activities

1. Throughout the five year period, local public health unit contracts will require health units to conduct recall of infants ages 19 – 35 months in their jurisdiction.
    - Funded by general immunization cooperative agreement.

2. Throughout the five year period, the NDDoH will recall adolescents ages 12 – 17 for routinely recommended vaccines (Tdap, MCV4, HPV, and varicella) based on the NDIIS.
    - Funded by general immunization cooperative agreement.

3. Throughout the five year period, the NDDoH will recall infants ages 19 – 35 months for routinely recommended vaccines (4:3:1:3:3:1:4) based on the NDIIS.
    - Funded by general immunization cooperative agreement.

4. Starting June 2014 and annually thereafter, the NDDoH will send letters to parents of children entering kindergarten and seventh grade to notify them of immunizations still needed for school entry based on the NDIIS.
    - Funded by general immunization cooperative agreement.

5. Starting in 2014 and quarterly thereafter, the NDDoH will send HPV vaccination postcards to parents of children turning age 11 to notify them of the HPV vaccine and its importance.
    - Funded by general immunization cooperative agreement.

6. Starting in February 2017, the NDDoH will pilot adult immunization recall for people 65 and older for pneumococcal and zoster vaccines in three counties in North Dakota.
    - Funded by general immunization cooperative agreement.

7. Starting in February 2017, and twice per year thereafter, the NDDoH will recall Ryan White clients for recommended immunizations based on age and high risk status.
    - Funded by the Ryan White Program.

Provider Assessments and Feedback

Provider assessment and feedback involves retrospectively evaluating the performance of providers in delivering one or more vaccinations to a client population and giving this information as feedback to the providers. Assessment and feedback can also involve other activities (e.g., incentives or benchmarking).

Assessment and feedback for vaccination providers is recommended based on strong evidence of effectiveness in improving vaccination coverage: (1) in adults and children; (2) whether used alone or with additional components; and (3) across a range of settings and populations. The review team could not determine which of the characteristics of assessment and feedback contributed most to its effectiveness; however, a variety of assessment and feedback strategies have been consistently effective in a wide range of contexts.

Activities

1. Throughout the five year period, local public health unit contracts require health units to assess their jurisdictions' immunization rates using the NDIIS and report to the NDDoH quarterly.
    - Funded by general immunization cooperative agreement.

2. Throughout the five year period, the NDDoH will email quarterly immunization rates for infants ages 19 – 35 months to providers in an effort to ensure providers are aware of their current rates.
    - Funded by the immunization information system sentinel site cooperative agreement.

3. Throughout the five year period, the NDDoH will email quarterly immunization rates for adolescents to providers in an effort to ensure providers are aware of their current rates.
    - Funded by the immunization information system sentinel site cooperative agreement.

4. Throughout the five year period, the NDDoH will maintain a website for state and county-level school entry immunization rates.
    - Funded by general immunization cooperative agreement.

5. Starting in January, 2014, the immunization program will conduct Assessment Feedback Incentive eXchange (AFIX) visits at a minimum of 25% of provider offices.
    - Funded by general immunization cooperative agreement.

6. Starting in November, 2016, the NDDoH immunization program will contract with the North Dakota State University Center for Immunization Research and Education to conduct an additional 50 AFIX visits per year for the next two years, focusing on increasing HPV vaccination rates.
    - Funded by a PPHF cooperative agreement.

Immunization Mandates

Vaccination requirements are laws or policies requiring vaccinations or other documentation of immunity as a condition of child care, school, and college attendance. Their purpose is to reduce the incidence of vaccine-preventable disease and associated morbidity and mortality by increasing vaccination rates. Laws are created by states, with the specific vaccines required established by the legislature and embodied in statutes or adopted as administrative rules by health or education departments. Institutions, such as colleges and private schools, may establish additional vaccination policies for attendance or residence. Vaccination requirements vary across jurisdictions by comprehensiveness, acceptable documentation of immunity, access to exemptions (especially nonmedical exemptions), and the type and consistency of enforcement.

The Community Preventive Services Task Force recommends vaccination requirements for child care, school, and college attendance based on strong evidence of effectiveness in increasing vaccination rates and in decreasing rates of vaccine-preventable disease and associated morbidity and mortality. These findings are based on studies demonstrating effectiveness of vaccination requirements for attendance in a variety of settings, for an array of recommended vaccines, and in populations ranging in age from early childhood to late adolescence.

Activities

1. Throughout the five year period, the NDDoH will continue to require ACIP recommended vaccines for child care entry, with the exception of influenza vaccine.
    - Funding not required.

2. Throughout the five year period, the NDDoH will continue to require ACIP recommended vaccines for kindergarten entry, with the exception of influenza vaccine.

- Funding not required.

3. Throughout the five year period, the NDDoH will continue to require ACIP recommended vaccines for middle school entry, with the exception of influenza and HPV vaccines.
    - Funding not required.

4. Throughout the five year period, the NDDoH will annually assess school immunization rates and report to the CDC.
    - Funded by general immunization cooperative agreement.

5. Throughout the five year period, the NDDoH will maintain a website for state and county-level school entry immunization rates.
    - Funded by general immunization cooperative agreement.

7. Starting April 2014, the NDDoH immunization program will conduct continuous quality improvement for increasing school entry immunization rates.
    - Funded by general immunization cooperative agreement.

8. Starting in March 2017, the NDDoH immunization program will collaborate with the Strategic Vision and Strategy Committee to contract with one local public health unit and coordinating school district to use best practices to increase school entry immunization rates.
    - Funded by a one-year Bush Foundation Grant.

9. By December 31, 2017, an electronic school module will be implemented as a school immunization tracking and reporting system. This is in an effort to improve student compliance with immunization requirements and promote healthy students free from diseases prevented by vaccines.
    - Funded by general immunization cooperative agreement.

NDIIS:

The Community Preventive Services Task Force recommends immunization information systems on the basis of strong evidence of effectiveness in increasing vaccination rates.

Evidence is considered strong based on the findings from 71 published papers and 123 conference abstracts showing that IIS are effective in increasing vaccination rates and reducing vaccine-preventable disease through their capabilities to: 1) create or support effective interventions such as client reminder and recall systems, provider assessment and feedback,

and provider reminders; 2) generate and evaluate public health responses to outbreaks of vaccine-preventable disease; 3) facilitate vaccine management and accountability; 4) determine client vaccination status for decisions made by clinicians, health departments, and schools; and 5) aid surveillance and investigations on vaccination rates, missed vaccination opportunities, invalid dose administration, and disparities in vaccination coverage.

Activities

1. Throughout the five year period, the NDDoH will require the use of the NDIIS for childhood immunizations.
    - Funding not required.

2. Throughout the five year period, the NDDoH will continue a contract with Noridian Mutual Insurance Company (NMIC) to maintain the NDIIS and its functionality. Maintenance includes reminder and recall, forecasting, interoperability, vaccine ordering, coverage assessment reports, vaccine accountability, data mart, etc.
    - Funded by general immunization and PPHF cooperative agreements. Future of PPHF funding unknown. General funding required for sustainability of the NDIIS in the future.

3. Throughout the five year period, the NDDoH will utilize the NDIIS in every aspect of the immunization program from disease surveillance, to provider assessments, to pandemic preparedness.
    - Funded by general immunization cooperative agreement.

4. By December 31, 2017, an electronic school module will be implemented as a school immunization tracking and reporting system. This is in an effort to improve student compliance with immunization requirements and promote healthy students free from diseases prevented by vaccines.
    - Funded by general immunization cooperative agreement.

5. The NDIIS will continue to be connected to electronic medical records throughout the state, in an effort to assist providers in meeting meaningful use requirements. Interoperability will also increase the number of adult doses in the NDIIS.
    - Funded by the PPHF cooperative agreement through September 2017. General funding required if additional PPHF funds are unavailable in the future.

School Located Immunization Clinics:

Vaccination programs in schools or organized child care centers are multi-component interventions delivered on-site to improve immunization rates in children and adolescents. These programs include two or more of the following components: (1) immunization education

and promotion, (2) assessment and tracking of vaccination status, (3) referral of under-immunized school or child care center attendees to vaccination providers, and (4) provision of vaccinations. Additional components such as reduced client out-of-pocket costs, client incentives, and enhanced access to vaccination services may be provided. Organized child care centers include non-home day care, nursery or pre-school, and federal Head Start settings for children aged 5 years and younger. In most states, laws establishing vaccination requirements for school and child care center attendance require assessment, documentation, and tracking specific to each vaccine. Vaccination programs considered in this review either expanded the assessment and tracking process to other immunizations or conducted additional interventions. Vaccination programs are often collaborations between the school or child care center and local health departments, private healthcare providers, or community healthcare services.

The Community Preventive Services Task Force recommends school and organized child care center-located vaccination programs based on strong evidence of effectiveness in increasing vaccination rates, and in decreasing rates of vaccine-preventable disease and associated morbidity and mortality. The updated Task Force recommendation is based on findings from 27 studies in which vaccination programs in schools or child care centers 1) provided vaccinations on site 2) were administered by a range of providers including school health personnel, health department staff, and other vaccination providers, 3) were delivered in a variety of different school and organized child care settings, 4) delivered one or more of a range of vaccines recommended for children and adolescents, and 5) included additional components such as education, reduced client out-of-pocket costs, and enhanced access to vaccination services. School- and organized child care center-located vaccination programs may be most useful in improving immunization rates among children and adolescents for new vaccines, and vaccines with new, expanded recommendations (such as the annual immunization for seasonal influenza) where background rates are likely to be very low and improvements in coverage are needed.

Activities

1. Throughout the grant period, the NDDoH will coordinate a school located influenza vaccination clinic task force in an effort to encourage school clinics and for local public health units and community vaccinators to share best practices.
    - Funded by general immunization cooperative agreement.

2. Throughout the grant period, the NDDoH will allow the use of cooperative agreement funding to support school located vaccination clinics conducted by local public health units.
    - Funded by general immunization cooperative agreement.

The following strategies are not formally recommended by the Community Preventative Services Task Force, but the NDDoH feels strongly that they will have a positive impact on immunization rates in North Dakota.

Access to Immunizations

Ensuring access to vaccines, especially in a rural state like North Dakota, is critical for maintaining and increasing immunization rates.

Activities

1. Throughout the five year period, the NDDoH will continue to provide all ACIP recommended vaccines to enrolled providers for administration to Vaccines For Children (VFC) eligible children.
    - Funded by VFC Program.

2. Throughout the five year period, the NDDoH will supply federal 317 for administration to uninsured and underinsured adults. Available vaccines through this program are dependent on funding.
    - Funded by 317 Program.

3. Throughout the five year period, the NDDoH will supply the birth dose of hepatitis B vaccine universally using federal 317 vaccine. This vaccine availability is also dependent on federal funding.
    - Funded by 317 Program.

4. Throughout the five year period, the NDDoH will supply federal 317 vaccine for use at private clinics for underinsured children. This vaccine availability is also dependent on federal funding.
    - Funded by 317 Program.

5. Throughout the five year period, the NDDoH will sign standing orders for pharmacists who want to immunize, but are unable to obtain private physician standing orders.
    - Self-sustainable.

6. Throughout the five year period, local public health units will bill insurance, when applicable, for the cost of the vaccine and the administration fee, allowing insured children and adults to be vaccinated at public health, therefore increasing access to vaccines, especially in rural areas.
    - Self-sustainable.

Collaboration with Stakeholders

Receiving input from immunization stakeholders is an important component to maintaining and increasing immunization rates. The North Dakota Immunization Advisory Committee provides

necessary input into the need and implementation of school immunization mandates, practice-level feedback on the implementation of immunization recall, and other important information.

Activities

1. Throughout the five year period, the NDDoH will coordinate an immunization advisory committee. The committee will be comprised of immunization stakeholders, including public health, private providers, pharmacists, colleges, etc. Monthly conference calls will be held.
    - The committee will:
        i. Advise and make recommendations to the North Dakota Department of Health (NDDoH) regarding immunizations and vaccine-preventable diseases based on ACIP recommendations.
        ii. Develop a standardized immunization schedule(s) for North Dakota.
        iii. Develop and encourage partners and stakeholders to use best practices to increase immunization rates.
        iv. Coordinate and help to develop campaigns to increase immunization rates.
        v. Advise on the use of 317 funds and state funding, when applicable.
        vi. Receive and provide feedback and advice on issues being faced at the provider level.
        vii. Promote and assist in the development of immunization coalitions throughout the state.
        viii. Determine possible improvements to the North Dakota Immunization Information System and promote its use.
    - Funded by general immunization cooperative agreement.

2. Throughout the five year period, the NDDoH immunization program will participate on the ND Cancer Coalition HPV Task Force.
    - Funded by general immunization cooperative agreement.

Education

Provider education when used alone involves giving information regarding vaccinations to providers to increase their knowledge or change their attitudes. Techniques by which information is delivered can include written materials, videos, lectures, continuing medical education programs, computer-assisted instruction, and distance-based training with access to the educator using the internet or satellite.

The Community Prevention Task Force finds insufficient evidence to determine the effectiveness of provider education interventions when implemented alone in improving vaccination rates or in reducing vaccine-preventable illness. Evidence is considered insufficient

because the five identified studies observed changes in vaccination rates that were both small in magnitude and inconsistent.

The NDDoH believes the provider education is an integral method to ensure vaccination rates are maintained or increased.

Activities

1. The North Dakota Immunization Program will host a statewide immunization conference every other year (2014, 2016, 2018, etc.) in an effort to educate healthcare providers across the state about immunization and vaccine preventable diseases. Best practices for increasing immunization rates will also be shared at the conference.
    - Funded by general immunization cooperative agreement and registration fees.

2. Throughout the five-year period, the NDDoH will host monthly "Lunch and Learn" webinars about immunization-related topics for healthcare providers.
    - Funded by general immunization cooperative agreement.

3. Throughout the five-year period, the NDDoH will visit a minimum of 50% of Vaccines For Children Program enrolled providers per year.
    - Funded by general immunization cooperative agreement.

4. Throughout the five-year period, the NDDoH will distribute a quarterly immunization newsletter in an effort to provide immunization education to healthcare providers across the state.
    - Funded by general immunization cooperative agreement.

5. Throughout the five-year period, the NDDoH will continue to maintain an immunization website.
    - Funded by general immunization cooperative agreement.

6. Throughout the five-year period, the NDDoH will continue to develop press releases and respond to media inquiries for immunization-related topics.
    - Funded by general immunization cooperative agreement.

7. Starting July 1, 2013 and throughout the five-year period, the NDDoH will host an immunization social media page in an effort to provide education to the public and to providers.
    - Funded by general immunization cooperative agreement.

Conclusion

The overriding goal of this plan is to maintain and increase immunization rates in an effort to reduce or eliminate vaccine preventable diseases in North Dakota. The plan is intended to be a fluid document and will be changed as needed based on vaccine recommendations, immunization coverage rates, vaccine preventable disease surveillance, data-driven strategies, and funding. The NDDoH will coordinate this effort in North Dakota, but would not be successful without its partners, including private healthcare providers and local public health units.