

North Dakota State University Center for Immunization Research and Education

Immunization and Exemption Policies and Practices in North Dakota

A Comprehensive Review and Recommendations for Improvement

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6-13-2016

Executive Summary

North Dakota has experienced more than a decade of declining immunization rates. In 2000, 95% of North Dakota's kindergartners were fully immunized against diphtheria, tetanus, pertussis, measles, mumps, rubella, and varicella. During the 2014-2015 school year, North Dakota ranked as one of the five lowest states for kindergarten immunization rates, with only 89% of kindergartners fully immunized against these diseases. During the 2015-2016 school year, approximately 91% of kindergartners had received all of the recommended vaccinations.

These rates are well below the Healthy People 2020 goals of having 95% of kindergarteners fully immunized. This threshold is important to achieve herd immunity, which occurs when a critical percentage of the population is vaccinated against a disease. When herd immunity is achieved, outbreaks are prevented by limiting the spread of disease.

In addition to declining immunization rates, the state has seen a six-fold increase in the number of parents filing immunization exemptions. More than 3% of kindergartners had an immunization exemption on file during the 2015-2016 school year, whereas only 0.5% of kindergartners had an exemption in 2000. In private schools, the average rate of exemption is nearly twice the rate that is seen in public schools.

Furthermore, nearly 7% of kindergartners were unaccounted for in the school immunization survey data in 2015-2016. These students may be fully immunized without an immunization record on file at their school, they may be partially immunized, or they may not be immunized.

In North Dakota, children are required to show proof of immunization before entry into child care, school, or home-based instruction. Schools and child care centers are responsible for the collection of immunization records and exemption forms and the enforcement of state immunization requirements. Children who are not fully immunized according to state requirements have 30 days to receive any missing immunizations or they must be excluded from school.

North Dakota allows three types of immunization exemptions: medical, religious, and personal belief (philosophic/moral). North Dakota has been classified as one of the easiest states to obtain an immunization exemption; a physician's signature is required to obtain a medical exemption, but only a parent/guardian signature is required to claim a religious or personal belief exemption.

To better understand North Dakota's decreasing immunization rates, increasing exemption rates, and the large number of students with an unknown immunization status, the North Dakota Department of Health (NDDoH) engaged the North Dakota State University (NDSU) Center for Immunization Research and Education (CIRE) to study immunization policies and practices in the state. The CIRE was tasked with surveying immunization stakeholders about their beliefs regarding school and child care immunizations and exemptions in North Dakota. The CIRE was also tasked with researching other states' school and child care immunization enforcement and exemption laws and policies.

The stakeholder engagement process was done for three reasons:

- 1) To gain an understanding of the current state of immunization and exemption attitudes and opinions in North Dakota,
- 2) To facilitate meaningful participation in in-depth discussions on current immunization and exemption policies and practices in North Dakota, and
- 3) To make recommendations for potential policy, rule, or practice/process changes to the current immunization and exemption system in North Dakota.

The CIRE surveyed immunization stakeholders across the state by conducting focus groups and one-on-one interviews. Participating stakeholders included healthcare providers, public health employees, school officials, parents, legislators, and state government employees. The CIRE also reviewed and analyzed data, created a survey for North Dakota chiropractors, and compared immunization rates in enforcing and non-enforcing schools.

Stakeholders overwhelmingly agreed that the process of obtaining an immunization exemption in the state of North Dakota is too easy and should be strengthened. The most common recommendation to strengthen the current policy was to require science-based immunization education from a healthcare provider or public health nurse for parents requesting a religious or personal belief exemption.

Most schools around the state are not enforcing immunization requirements to the extent of excluding children who are noncompliant with immunization requirements. Many school administrators expressed displeasure that the enforcement of immunization requirements was a responsibility of the school system, and that excluding children from school presented a philosophical conflict for them as educators. School administrators from schools annually enforcing immunization requirements believed that immunization compliance was part of a safe and healthy school environment. Regardless of philosophy, many administrators understood why the school system is tasked with enforcement and agreed that partnerships with local public health units could help alleviate many of the barriers to full immunization compliance.

One important event happened after the commencement of the project that had an impact on results and recommendations. In October 2015, the Assistant Attorney General of North Dakota addressed school superintendents and reviewed North Dakota's immunization policies. This presentation called attention to the ability of the North Dakota Department of Public Instruction (NDDPI) to withhold funds from schools that were allowing children who were noncompliant with immunization requirements to attend school. The legal liability of non-enforcing schools in the event of an outbreak was also discussed.

Historically, very few in schools in North Dakota have strictly enforced immunization requirements. After the presentation, some schools and school districts decided to more strictly enforce immunization requirements, resulting in a study opportunity to evaluate the impact of enforcement in real time.

Immunization rates were compared in schools that enforced and did not enforce immunization requirements at the beginning of the 2015-2016 school year. Results showed that schools enforcing immunization requirements had significantly higher immunization rates than schools that did not enforce.

Immunization rates were also compared in three types of school districts from fall 2015 and spring 2016: 1) a school district that has annually enforced immunization requirements, 2) two school districts that began enforcing immunization requirements during the 2015-2016 school year, and 3) a school district that did not enforce immunization requirements to the extent of excluding noncompliant children during the 2015-2016 school year. The school district that regularly enforced immunization requirements did not see a significant difference in immunization rates, having met the Healthy People 2020 goal of 95% of kindergartners being immunized at both time points. The school district that did not enforce immunization requirements did see a small increase in immunization rates after making some efforts to improve immunization compliance, but they did not meet Healthy People 2020 goals. The largest increase in immunization rates came from the school districts enforcing immunization requirements for the first time in 2015-2016. Significant increases in immunization rates were observed, with enforcing schools meeting the Healthy People 2020 Goals for kindergarten immunization rates.

Overall, school enforcement of immunization requirements has the greatest potential to increase immunization rates in North Dakota. With 7% of students unaccounted for in school immunization data, bringing those students up-to-date with requirements or collecting records for those students could increase immunization rates above 95% in many areas of the state, as seen in two large school districts that began enforcing immunization requirements during the 2015-2016 school year. Even if the exemption process is made more difficult, decreasing the current immunization exemption rate of 3% will have much less impact on immunization rates compared to stricter school enforcement of immunization requirements. Nonetheless, the steady increase in exemption rates should not be ignored, and a policy change may be needed.

To improve immunization rates in North Dakota, the CIRE recommends the following changes, which are organized by policy, rule, and practice/process. Policy changes need legislative approval; rule changes need approval from the state health council; and practice/process changes are activities needed to increase immunization rates..

Policy Changes

- North Dakota should require parents and guardians to obtain the signature of a healthcare provider (physician, nurse practitioner, or physician's assistant) or public health nurse to receive a nonmedical exemption to immunization.
- The North Dakota Century Code language should be changed; specifically, moral and philosophic exemptions should be combined and jointly called "personal belief" exemptions.

Rule Changes

- North Dakota Administrative Rules state that the tetanus, diphtheria, and acellular pertussis (Tdap) booster and meningococcal conjugate (MCV4) vaccines are required for seventh grade entry. The rules should be changed to include the next higher grade each subsequent year to ensure that students who were not vaccinated at seventh grade or who are transferring to a North Dakota school are included in the requirement.

Practice/Process Changes

- The NDDPI, working closely with the NDDoH, should mandate the enforcement of school immunization requirements.
- If the policy change requiring the signature of a healthcare provider or public health nurse on the nonmedical exemption form is not deemed feasible or advisable, the NDDoH should limit access to the immunization exemption form. The immunization exemption form would only be available by request from the NDDoH. The form should not be readily available at schools or on the internet.
- The NDDoH should create a new immunization exemption form, which is separate from the Certificate of Immunization.
- The NDDoH and the NDDPI should modify the state immunization manual. The updated manual should include sample documents, current requirements, best practices, and frequently asked questions. This should be distributed and/or promoted among schools and local public health units.
- The NDDoH should provide more guidance to schools on the management of immunization compliance and exclusion for homeschooled children. In the school immunization survey, homeschool data should be collected separately.
- The NDDPI should incorporate immunization training opportunities for school administrators and staff to learn how to best incorporate immunization policies and practices into their schools.
- The NDDPI and school administrators should review the processes for determining average daily membership and the distribution of foundation aid to assure that schools are not financially penalized if children are absent from school because of noncompliance with state immunization requirements.
- The NDDPI and NDDoH should encourage all schools to track immunization status and compliance through the use of an electronic system.
- The NDDPI and NDDoH should better market the resources they have for schools regarding immunization compliance and the completion of the school immunization survey.
- The NDDoH should develop and target educational strategies for schools with persistently high immunization exemption rates, particularly private schools.
- All schools should follow the 30-day grace period outlined in the North Dakota Century Code (N.D.C.C.), and should exclude noncompliant students 30 days after the start of the school year or 30 days after enrolling in a school system.
- All schools should work closely with local public health units to improve immunization rates and compliance.
- Local public health units should create a memorandum of understanding with local schools so they can assist with immunization requirements and reporting.
- Local public health units should attend school registration events to provide and interpret immunization records, answer parent questions, and give missing immunizations.
- Schools should work with local public health units to enter out-of-state immunization records into the North Dakota Immunization Information System (NDIIS).
- Schools should consider hosting immunization clinics to achieve high immunization rates and full immunization compliance.

- Schools must follow-up with students who are in the process of receiving a series of immunizations every 30 days to ensure students are making progress towards full immunization compliance.
- The NDDoH should continue to work with other states on data sharing agreements to ease the process of accessing immunization records from out-of-state children.
- Local immunization stakeholders should meet yearly to discuss best practices, immunization clinics, potential collaborations, and concerns.
- The NDDoH should work closely with Lutheran Social Services, New Americans, healthcare centers providing care to New Americans, translators, and local public health units to develop culturally competent immunization materials and practices for New Americans to increase knowledge and help them overcome barriers to achieve immunization compliance.

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Introduction

Immunizations have been acknowledged as one of the 10 greatest public health achievements of the 20th Century.¹ They have helped eradicate smallpox from the globe and eliminate diseases such as polio and measles from many parts of the world.^{1,2} Today, vaccines are routinely given to people of all ages in the United States for 17 infectious diseases.¹

History of Vaccine Requirements and Exemptions in the United States

School vaccination laws have played a key role in the prevention and control of vaccine preventable diseases in the United States. In 1827, Boston was the first city in the United States to require a smallpox vaccination for children attending public school, and the state of Massachusetts was the first state to require smallpox immunization for school entry in 1855.^{3,4} Other cities and states followed suit and adopted laws requiring immunizations for school entry. Today, all states have immunization requirements for school children, and school requirements have helped the United States achieve high vaccination rates.³

Immunization mandates have been contested within the United States court system. The United States Supreme Court has upheld immunization mandates on two separate occasions. In 1905 in *Jacobson v. Massachusetts*, the U.S. Supreme Court ruled that individual states could enforce compulsory vaccination laws in order to protect the public's health and safety. In 1922's *Zucht v. King*, the U.S. Supreme Court upheld a San Antonio, Texas city ordinance that prohibited children from attending school without a certificate of immunization for the smallpox vaccination.⁴

For those unable or unwilling to be vaccinated, immunization exemptions are available in each state. Individual states determine the exemptions available and the process by which exemptions are obtained. Exemptions can be categorized as either medical or nonmedical, and nonmedical exemptions can be further categorized as religious or personal belief exemptions. Personal belief exemptions are also known as philosophical, moral, and/or conscientious exemptions, and will be called "personal belief exemptions" from this point forward. Each state allows medical exemptions to immunization.⁵ Two states, Mississippi and West Virginia, only allow medical exemptions for school children; California will only allow medical exemptions starting in July 2016. Other states allow nonmedical exemptions; in July 2016, 47ⁱⁱ states will allow religious exemptions, and 17ⁱⁱⁱ states will allow personal belief exemptions in addition to medical and religious exemptions for school aged-children.^{5,6} (Figure 1)

ⁱ Diphtheria, Hepatitis A, Hepatitis B, Haemophilus influenza type b (Hib), Human Papillomavirus (HPV), Influenza, Measles, Meningococcal, Mumps, Pertussis, Pneumococcal, Poliomyelitis, Rotavirus, Rubella, Shingles, Tetanus, Varicella

ⁱⁱ As of July 2016, all states will allow religious exemptions for school entry except CA, MS, and WV

ⁱⁱⁱ The following states will allow personal belief exemptions for school entry as of July 2016: AZ, AR, CO, ID, LA, ME, MI, MN, ND, OH, OK, OR, PA, TX, UT, WA, WI

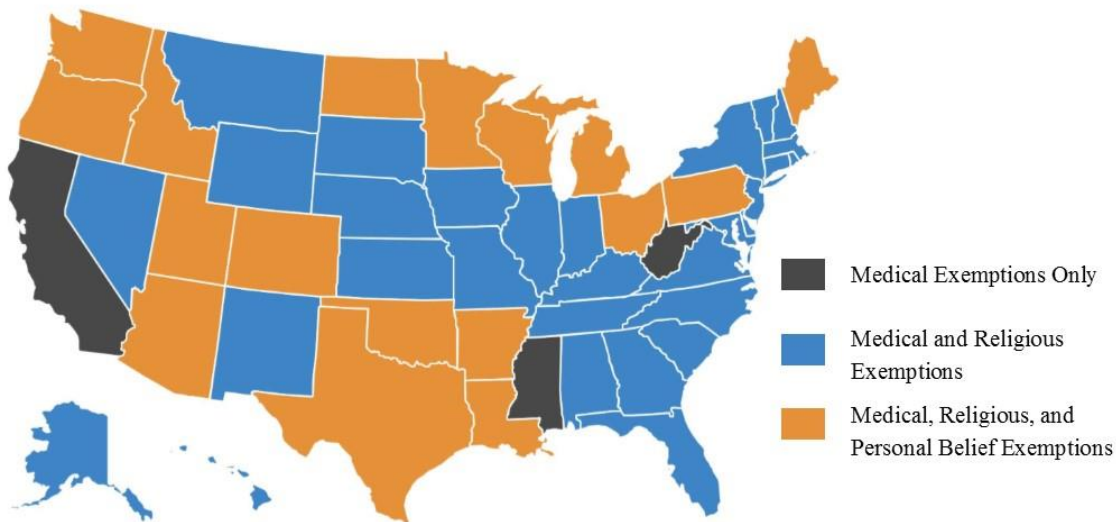


Figure 1. Immunization Exemptions Available by State, School-Aged Children, July 2016

Source: Centers for Disease Control and Prevention Public Health Law Center: State School and Childcare Vaccination Laws and Morbidity and Mortality Weekly Report: Vaccination Coverage among Children in Kindergarten – United States, 2014-2015 School Year

North Dakota’s Immunization Policy

The North Dakota Century Code (N.D.C.C.) and Administrative Rules contain North Dakota’s immunization policies and requirements. (Appendix A) The N.D.C.C. states “A child may not be admitted to any public, private, or parochial school, or day care center, child care facility, head start program, or nursery school operating in this state or be supervised through home-based instruction unless the child’s parent or guardian presents to the institution authorities a certification from a licensed physician or authorized representative of the state department of health that the child has received age-appropriate immunizations...”⁷

North Dakota law allows children to be enrolled in school if they have not completed the immunization requirements but are in the process of receiving any remaining immunizations. Children who are not fully immunized before the start of school have 30 days to begin receiving the required immunizations, or they are to be excluded from school.⁸

The state allows for three types of immunization exemptions: medical, religious, and moral/philosophical (personal belief). Additionally, North Dakota allows a “history of disease” exemption for children with a reliable history of varicella (chickenpox). A physician’s signature is required to obtain a medical exemption in North Dakota. A parent’s signature is required for religious and personal belief exemptions. A physician or parent signature is required for a history of disease exemption, which can be filed for students with a reliable history of varicella. All exemption forms must be turned into a child’s school before he/she can be admitted.⁸ In the

event of an epidemic or outbreak of a vaccine-preventable disease in the state, unimmunized children may be removed from school for an extended period of time.⁷

In North Dakota, the Certificate of Immunization can be found online and must be filled out and signed by a healthcare provider or nurse. The Certificate of Immunization may also be printed by a healthcare provider or nurse from the NDIIS. In addition, this certificate serves as the state's Immunization Exemption Form. (Appendix B) Parents must submit the Certificate of Immunization or another immunization record to their child's school before a child can be admitted.⁷

The N.D.C.C. requires schools to enforce state immunization requirements. Schools must determine if children are compliant with school immunization requirements, notify the parents of children who are not, and after a 30-day grace period, exclude children not meeting school immunization requirements.⁸ N.D.C.C. states that funding can be withheld from schools for allowing children to attend who do not meet state immunization requirements.^{9,10} Children are deemed compliant with state immunization requirements if they are 1) fully immunized, 2) have an immunization exemption on file, or 3) are in the process of receiving missing immunizations. Children who are noncompliant with state immunization requirements are 1) not up-to-date with school required immunizations, 2) do not have an immunization record on file at the school, 3) are not immunized, and/or 4) do not have an exemption on file at the school.

In North Dakota, immunizations were first required for school entry at the start of the 1975-1976 school year. That year, required immunizations were diphtheria, tetanus, pertussis, polio, measles, mumps, and rubella. At the start of the 2000-2001 school year, religious and personal belief exemptions were added, along with the requirement for immunization against hepatitis B. During the 2004-2005 school year, a vaccination requirement for varicella was added to the school requirements along with a history of disease exemption for chickenpox disease. In 2008, a tetanus, diphtheria, and acellular pertussis booster and meningococcal vaccines were made a requirement for middle school entry. These two vaccines are now required for entry into seventh grade.^{8,11}

Schools and child care centers are responsible for the collection of immunization records and immunization exemption forms. The enforcement of immunization requirements is the responsibility of the "institutional authority"; the institutional authority can be anyone designated by the governing body of an institution.⁸ Most often, the institutional authority of a school is a superintendent.

Enforcement of school immunization requirements can impact federal and state funding for schools. N.D.C.C. states that "the superintendent of each school district shall ensure that schools comply with all health, safety, and sanitation requirements."^{10,12} If a school district violates this requirement and does not take necessary corrective action, the NDDPI can impose sanctions.⁹ The sanctions may result in a fine of one thousand dollars per occurrence.¹²

Because state and federal funding are partially based on school attendance, schools may be financially impacted by the exclusion of noncompliant children. Currently, federal education law states that schools must meet adequate yearly progress (AYP), which is measured by

standardized test scores and attendance for children in grades kindergarten through eighth grade and test scores and graduation rates of children in grades nine through twelve. If a certain percentage of students do not attend school for a certain number of days, the school does not meet AYP. When this occurs for two consecutive years, schools can lose discretionary funds and some authority when determining how to spend federal dollars.¹³ Additionally, state funding for school districts is based on average daily membership: the total number of school days all children were enrolled in a school divided by the number of school days.¹⁴ Therefore, when children are excluded from school for being noncompliant with immunization requirements, it has the potential to impact school funding.

To collect immunization data, North Dakota uses the NDIIS and the school immunization survey. The NDIIS is a statewide database that collects vaccination data in North Dakota, as N.D.C.C. requires childhood immunizations given in the state to be entered into the NDIIS.¹⁵ It provides up-to-date information on immunization rates, consolidates vaccination records of children from multiple healthcare providers, generates reminder and recall vaccination notices for children, and provides vaccination forms.¹⁶ School staff are able to access the NDIIS, which assists with the collection of immunization records.

The school immunization survey is another data collection tool and is completed by each school in the fall for the NDDoH. The school survey collects aggregate data from each school on the number of children enrolled by grade, the number of children in each grade immunized against specific diseases, and the number of children that have medical, religious, or personal belief exemptions to immunization by grade. School survey data is sent to the Centers for Disease Control and Prevention (CDC) to compare immunization rates by state.

Project Background

During the 2014-2015 school year, North Dakota ranked as one of the five lowest states for kindergarten immunization rates, with only 89% of kindergartners immunized against diphtheria, tetanus, pertussis, measles, mumps, rubella, and varicella.^{6,17} (Figure 2) During the 2015-2016 school year, the percentage of North Dakota kindergartners fully vaccinated against the same was 91%.¹⁷ In 2000, approximately 95% of North Dakota kindergartners were fully immunized against the same diseases. These rates represent more than a decade of steadily decreasing immunization rates among children in North Dakota. (Figure 3)

In addition to declining immunization rates, North Dakota has seen a six-fold increase in the number of parents claiming an exemption to immunization. In 2000, only 0.5% of kindergartners had an exemption to immunization. In 2015-2016, 3.3% of kindergartners had an exemption to immunization, 73% of which were reported as a personal belief exemption.^{6,17} (Figure 3)

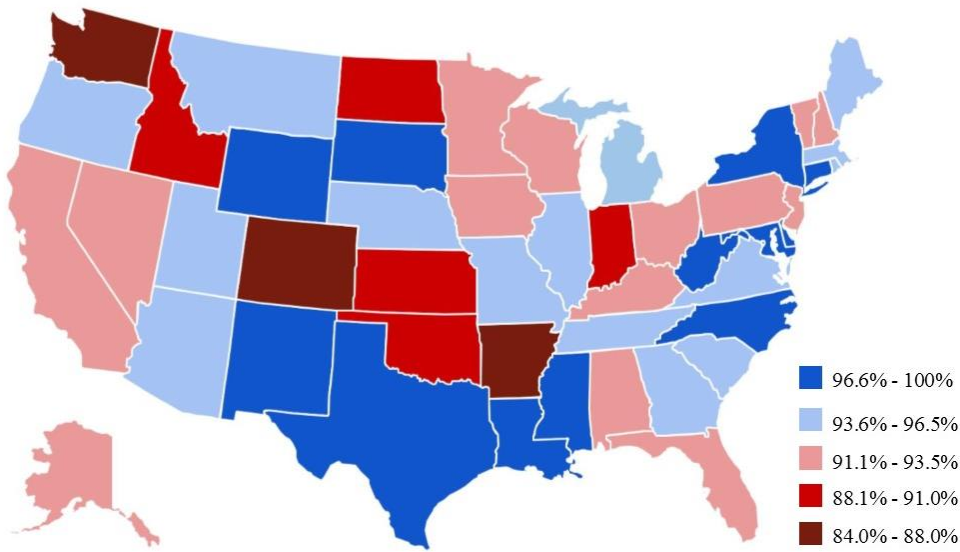


Figure 2. Average Kindergarten Immunization Rates by State for DTaP, MMR, and Varicella (where applicable), 2014-2015 (Hawaii Data Not Available)
 Source: Centers for Disease Control and Prevention

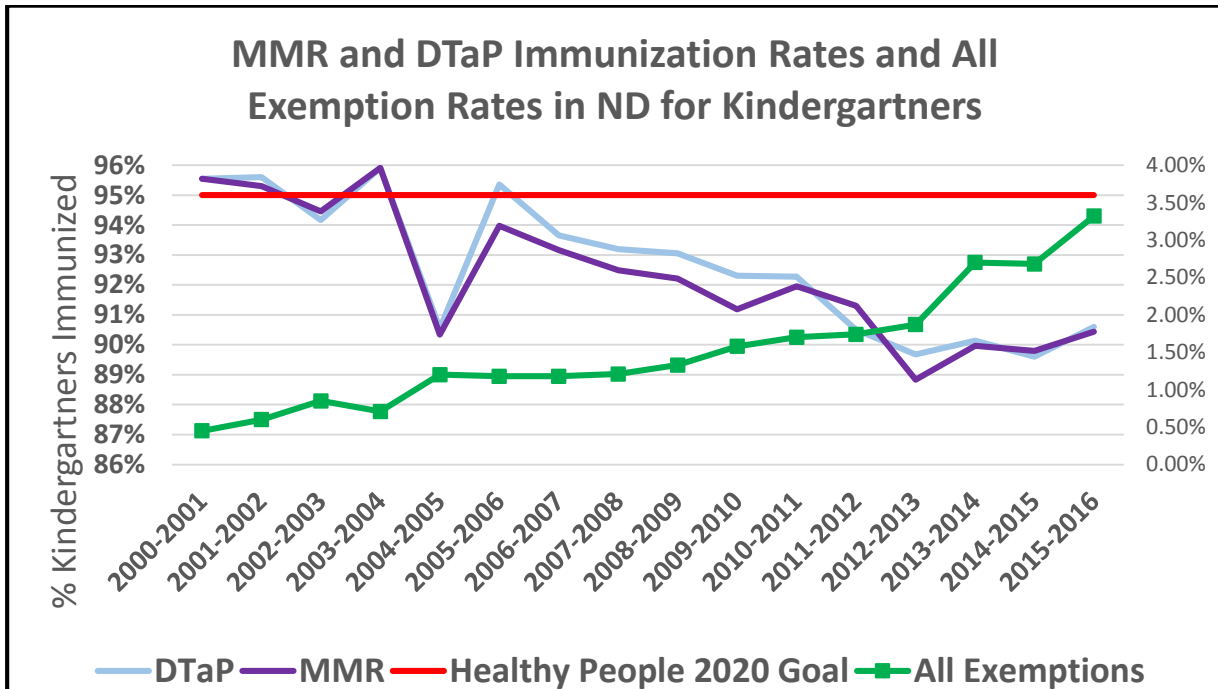


Figure 3. Kindergarten Immunization and Exemption Rates, 2000-2015; Includes Data for Medical, Religious, and Moral/Philosophic Exemptions
 Source: North Dakota Department of Health, Centers for Disease Control and Prevention
 *Graph updated with revised data on May 18, 2016.

North Dakota's low immunization rates and higher than average exemption rates are not reflective of the entire kindergarten population or problem. During the 2015-2016 school year, nearly 7% of kindergartners were unaccounted for in the school immunization survey data. These students all have an unknown immunization status; 2% of kindergartners do not have immunization records on file at their schools, while the remaining students may be partially immunized or unimmunized. Regardless of their true immunization status, this population of North Dakota's kindergartners is reported as not up-to-date in the school immunization survey until their record is provided to their school or they receive their missing immunizations.

North Dakota has also recently experienced a large increase in state population. According to the United States Census Bureau, North Dakota ranks as this decade's fastest growing state.¹⁸ Much of the population increase can be attributed to an oil boom in the western part of the state. This has filled many schools to capacity, increased the number of students entering school systems from out-of-state, and made the collection of immunization records and the enforcement of school immunization requirements difficult to complete.

Because of falling school immunization rates, increasing exemption rates, and a large percentage of students having unknown immunization status, the NDDoH engaged the NDSU CIRE to study North Dakota's immunization policies and practices and make recommendations for potential policy, process, and rule changes in the state. Specifically, the NDDoH asked the CIRE to survey immunization stakeholders as to their beliefs regarding school and child care immunizations and exemptions in North Dakota. The CIRE was also tasked with researching other states' school and child care immunization enforcement and exemption laws and policies.

The stakeholder engagement process was done for three reasons:

- 1) To gain an understanding of the current state of immunization and exemption attitudes and opinions in North Dakota,
- 2) To facilitate meaningful participation in in-depth discussions on current immunization and exemption policies and practices in North Dakota, and
- 3) To make recommendations for potential policy, process, and/or rule changes to the current immunization and exemption system in North Dakota.

Finally, the following event happened after the commencement of the project. It was not done in conjunction or as part of the project, but it had an impact on project results and recommendations and is worth mentioning.

In October 2015, the Assistant Attorney General of North Dakota addressed North Dakota's school superintendents at the annual North Dakota School Boards Association Conference to review North Dakota's immunization laws and rules for schools. The Assistant Attorney General reviewed state immunization requirements listed in the N.D.C.C. with school superintendents, calling attention to the ability of the NDDPI to withhold foundation aid from schools allowing children who are noncompliant with state immunization requirements to attend school. The legal liability of non-enforcing schools in the event of an outbreak was also discussed.

Historically, very few schools in North Dakota have enforced state immunization requirements to the extent of excluding children who are noncompliant with state law. Following the meeting,

some schools and school districts decided to more strictly enforce immunization requirements. This resulted in a study opportunity to evaluate the impact of enforcement on immunization rates, exemption rates, absenteeism rates and duration for noncompliant children, and workforce demands in some of these school districts.

Methodology

Data Collection

Immunization data was collected and analyzed from the NDDoH, CDC, and the Association of Immunization Managers (AIM). This included data from the North Dakota school immunization survey, data from the NDIIS, CDC Morbidity and Mortality Weekly Reports, and AIM surveys.

Immunization rates in North Dakota were analyzed by school district, school, and county. Epi Info™ was used to map kindergarten immunization rates by county for the 2015-2016 school year. Immunization rates for each county were calculated by averaging the immunization rate of diphtheria, tetanus, and pertussis (DTaP); measles, mumps, and rubella (MMR); and varicella in each county.

Evaluating the Effect of School Enforcement Policy on Immunization Rates

During focus groups, school administrators and staff shared their varying immunization and enforcement practices. Using the information gathered in focus groups, the CIRE classified schools and school districts based on enforcement practices. Then, immunization rates were compared between 1) schools from two large school districts annually enforcing immunization requirements and 2) schools from five large school districts not enforcing immunization requirements. The CIRE hypothesized that schools enforcing immunization requirements at the beginning of the 2015-2016 school year would have higher kindergarten immunization rates than schools not enforcing immunization requirements. Kindergarten immunization rates reported in the school immunization survey were provided by the NDDoH.

Kindergarten immunization rates were compared for polio; diphtheria, tetanus, and pertussis; measles, mumps, and rubella; hepatitis B; and varicella in 60 schools using a t-test comparing weighted least squares means with a Tukey-Kramer adjustment for multiple comparisons (statistically significant cutoff p-value = 0.05).

Evaluating Immunization Rates Before and After Enforcement

As previously mentioned, following the school superintendents' meeting with North Dakota's Assistant Attorney General at the annual School Boards Association Conference, some school districts decided to more strictly enforce immunization requirements. The CIRE hypothesized that school districts deciding to enforce immunization requirements during the middle of the 2015-2016 school year would see a significant increase in immunization rates after the enforcement of school immunization requirements and the exclusion of noncompliant children.

The CIRE also hypothesized that enforcement of immunization requirements could increase the number of parents filing for nonmedical exemptions.

To test the hypothesis, the CIRE reached out to four, large school districts and asked if they would repeat the school immunization survey in the spring of 2016 and report their updated immunization rates post-enforcement. Three types of school districts were selected: 1) a school district that has regularly enforced immunization requirements, 2) school districts that began enforcing immunization requirements during the 2015-2016 school year, and 3) a school district that increased its efforts toward compliance but did not enforce immunization requirements to the extent of excluding noncompliant children. School districts were classified according to enforcement policies disclosed in school focus groups.

School-reported rates from the school immunization survey completed in November of 2015 were used as a comparison, and data was aggregated by district. School nurses, secretaries, and staff provided the updated immunization rates and exemption rates.

A t-test comparing weighted least squares means with a Tukey-Kramer adjustment for multiple comparisons was used to determine if changes in immunization rates were significant (statistically significant cutoff p-value = 0.05).

Review of Literature and Other States' Policies and Procedures

Because each state determines its immunization requirements, available exemptions, and practices, state policies and practices are extremely variable. Each state's immunization policies and practices were examined to understand immunizations requirements, types of exemptions allowed and the process for obtaining exemptions, who enforces immunization requirements and how they're enforced, how immunization rates are collected and reported, and other practices.

To gather this information, many resources were used, including the CDC's Kindergarten Vaccination Coverage Reports and the CDC's Public Health Law Program's compilation of school immunization requirements. To gather specific components of individual state's school immunization requirements and exemption policies, the CIRE reviewed state policies obtained from each state's department of health website. In addition, national surveys on state immunization enforcement practices were reviewed. Lastly, if state laws, policies, and practices were still unclear, each state's immunization management division was contacted through email or phone to seek clarification and information.

To better understand the correlation between immunization policies and practices and immunization and exemption rates, a systematic review of the literature was conducted using PubMed and the NDSU Library Herd Search application. Specifically, literature was found by searching for the term "vaccine exemption" and refining the search to include "exemption(s)" and "health policy" from 2010-present. The role personal belief exemptions have played in the increase of vaccine preventable diseases in the United States was reviewed, as well as the financial impacts, clustering of those individuals seeking exemptions, effects of policy change, and availability of personal belief exemptions.

Stakeholder Engagement: Focus Groups and One-on-one Interviews

Sector-specific focus groups were conducted throughout the state in seven of North Dakota's largest cities: Fargo, Grand Forks, Bismarck, Mandan, Minot, Dickinson, and Williston. The following immunization stakeholder groups were targeted for participation: family medicine and pediatric healthcare providers, including doctors, physician's assistants, nurse practitioners, nurses and clinic staff; public health employees, including public health nurses and staff; school administrators, nurses and staff; parents; and state government employees from the NDDoH, NDDPI, North Dakota Attorney General's Office, and the North Dakota Governor's Office.

To recruit participants for focus groups, an immunization stakeholder was contacted for each stakeholder group in each city. This stakeholder often held the position of a lead physician, director of nursing, vaccine coordinator, school administrator, or another similar title. Once contacted about the project and having expressed their willingness to participate, the CIRE Project Manager and each local stakeholder worked together to schedule focus groups and determine invite lists of appropriate stakeholders in the region.

At the beginning of each focus group, participants were shown a brief presentation on the current state of immunizations in North Dakota and informed about the state's immunization policies and practices. (Appendix C) Stakeholders were then asked a series of sector-specific questions regarding immunization attitudes, beliefs, policies, and current practices. Lastly, they were asked for their opinions on potential immunization policy changes in the state. (Appendix D) Questions were written or selected in conjunction with the NDDoH; questions were selected because of their relationship to project objectives and by reviewing pertinent literature.

Telephone interviews were conducted with state legislators, those unable to attend focus groups, and others recommended as immunization stakeholders during focus groups and interviews. Interviewees were asked to review the aforementioned presentation before the interview. Interviewees represented various stakeholder groups from both urban and rural areas of the state.

Chiropractor Survey

Many stakeholders shared that there are several anecdotal cases of chiropractors in the state sharing misleading information about vaccinations to their clientele, and one chiropractor was holding seminars to "inform" people about vaccinations. The CIRE believed it was important to have a sample of North Dakota chiropractors' attitudes, beliefs and practices regarding immunizations, and a survey was created for North Dakota's chiropractors based on previous chiropractic surveys and also based on input from the NDDoH and the North Dakota Chiropractic Association (NDCA). (Appendix E)

The CIRE worked with the NDCA to distribute the electronic survey link through their membership listserv in their bi-monthly newsletter. There are approximately 250 NDCA members in the state out of approximately 400 total chiropractors.

Results

Data Collection

Immunization rates vary greatly between counties. Counties in the western part of the state, where a recent oil boom has led to rapid population growth, reported lower immunization rates. (Figure 4)

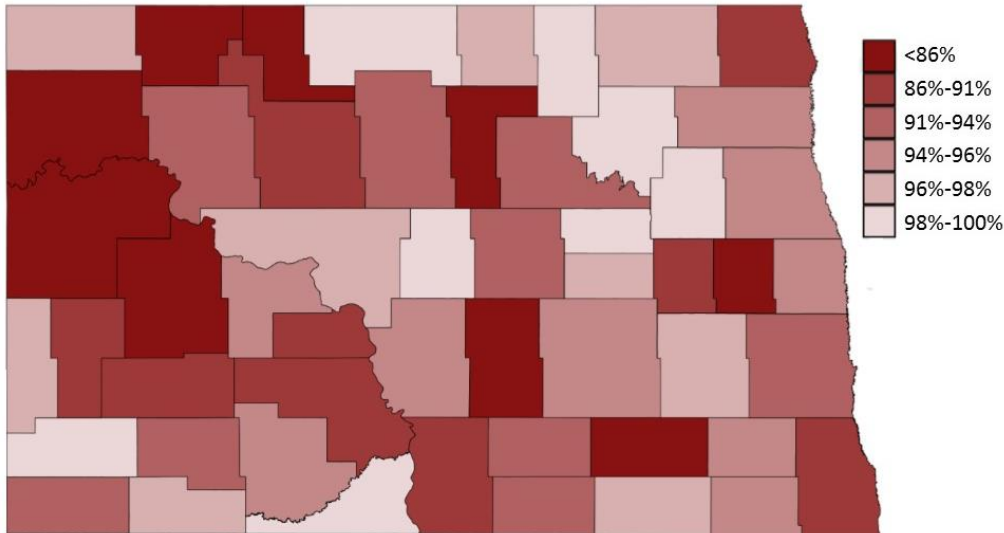


Figure 4. Kindergarten Immunization Rates by County, 2015-2016; Includes 2014-2015 Kindergarten Immunization Rates for Slope County
 Source: North Dakota Department of Health

According to the 2014 North Dakota Epidemiology Report and the NDDoH (A. Barber, written communication, May 2016), private schools have higher kindergarten exemptions rates than public schools. For the 2015-2016 school year, exemption rates in private school were near 6%, while public school exemptions were approximately 3%. (Figure 5)¹⁹

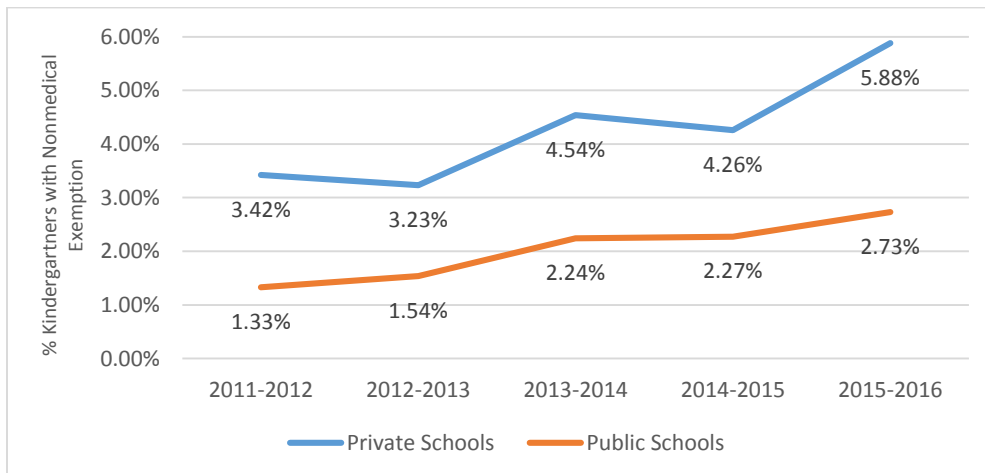


Figure 5. Nonmedical Exemption Rates for Kindergartners in North Dakota's Public and Private Schools
 Source: North Dakota Department of Health

Evaluating the Effect of School Enforcement Policy on Immunization Rates

After analyzing data from the school immunization survey, it was determined that kindergarten immunization rates for all required immunizations were significantly higher in the schools that enforced immunization requirements at the beginning of the 2015-2016 school year than the schools that did not enforce immunization requirements. Immunization rates for polio, DTaP, MMR, hepatitis B, and varicella were significantly higher in enforcing schools. (Figure 6) As a group, enforcing schools achieved the Healthy People 2020 goals for kindergarten immunization rates for all of the required immunizations, whereas none of the goals were met in the non-enforcing schools.

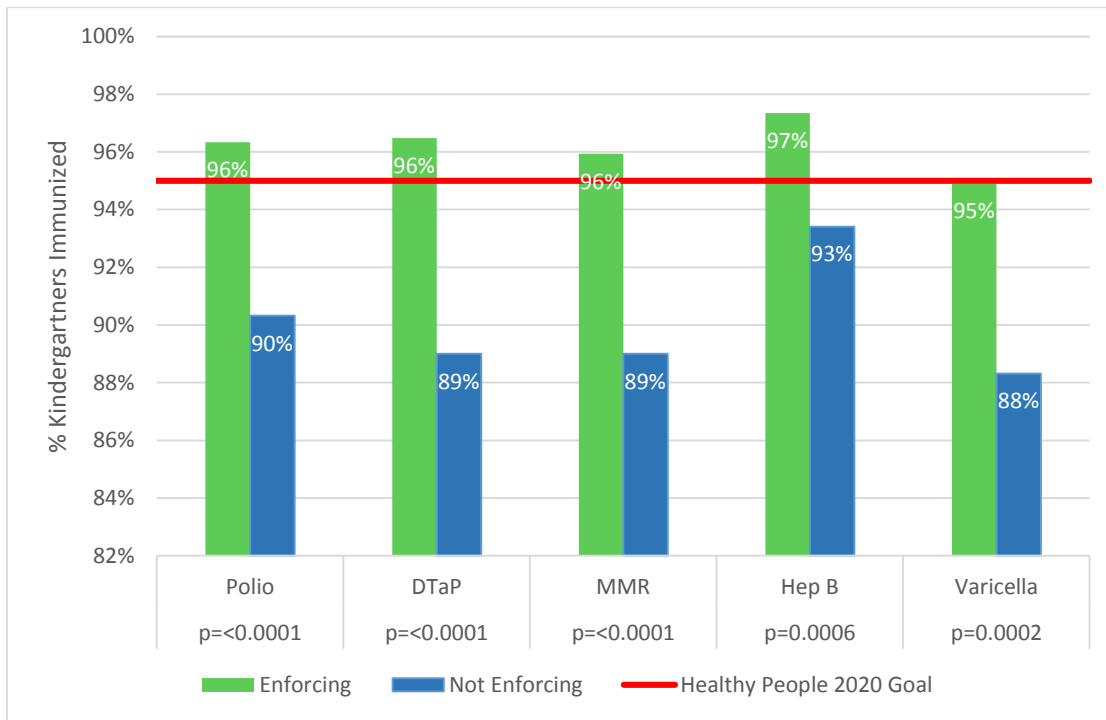


Figure 6. Kindergarten Immunization Rates in Schools Enforcing and Not Enforcing Immunization Requirements, Fall 2015
Source: North Dakota Department of Health

Evaluating Immunization Rates Before and After Enforcement

After analyzing immunization rates from fall 2015 and spring 2016, it was determined that immunization rates were higher for all vaccines in the school districts that began enforcing immunization requirements compared to the school district that did not enforce immunization requirements. Figures 7 and 8 show immunization rate changes for DTaP and MMR.

In the school district annually enforcing immunization requirements, immunization rates were consistently high and there was not a significant change in immunization rates from fall 2015 to spring 2016. In the two school districts that decided to enforce immunization requirements, there was a significant increase in immunization rates for all vaccines, and the school districts achieved immunization rates above 95%, reaching the Healthy People 2020 goal for kindergarten immunization rates. In the school district that did not enforce immunization requirements, there was an increase in immunization rates, but they were not able to achieve the Healthy People 2020 goals of a 95% coverage rate. This increase may be attributable to increased efforts to

improve immunization compliance short of excluding noncompliant children during the 2015-2016 school year.

Of note, significant increases were not seen in the number of parents filing nonmedical exemptions in schools that began to more strictly enforce immunization requirements. Additionally, schools noted that very few children were excluded because of noncompliance. One principal stated, “We ended up withholding two individuals for a short period of time, and then they were back in school. It was just a couple of days.”

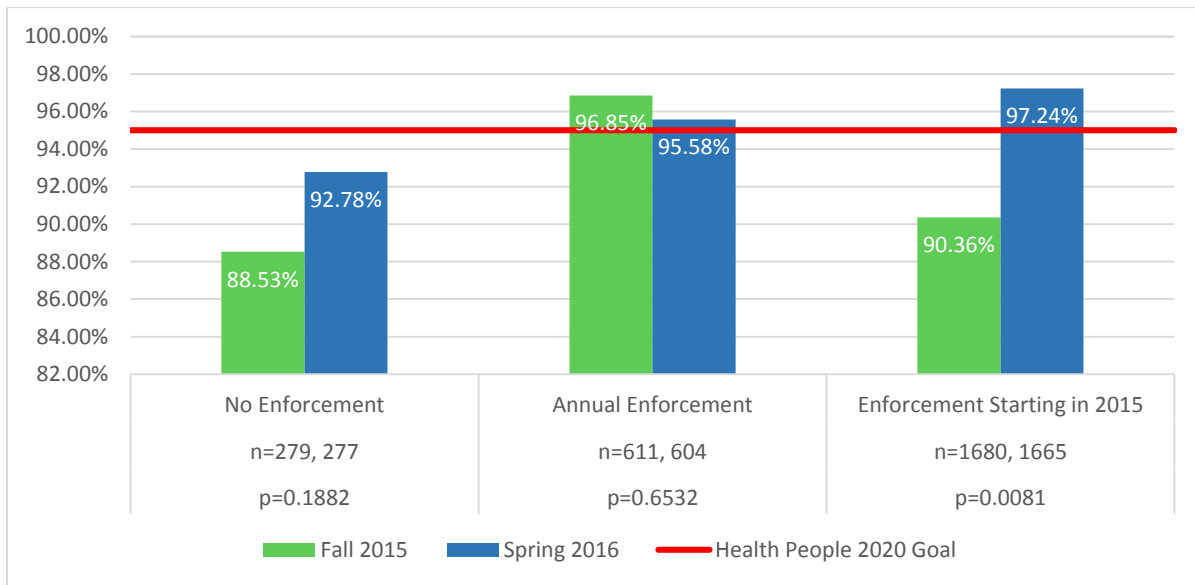


Figure 7. MMR Immunization Rates for Kindergartners in School Districts Before and After Assistant Attorney General's Notification in October 2015, Grouped by Enforcement Practices

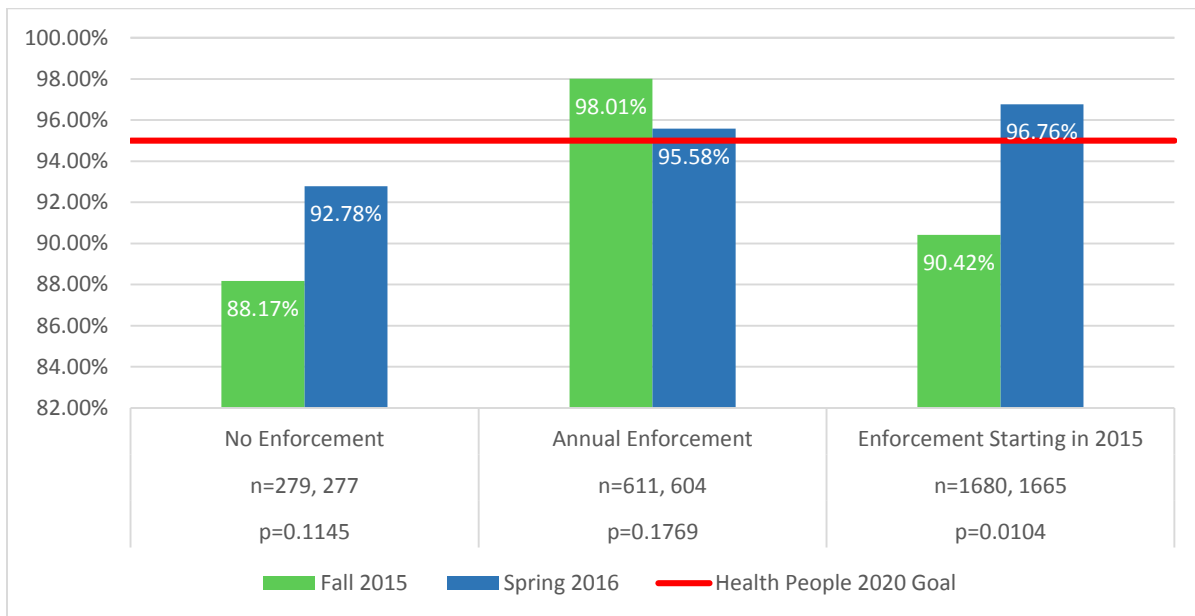


Figure 8. DTaP Immunization Rates for Kindergartners in School Districts Before and After Assistant Attorney General's Notification in October 2015, Grouped by Enforcement Practices

Literature Review: State by State Policies and Practices

Upon reviewing every states' immunization policies and practices, it was determined that immunization policies, practices, requirements, enforcement, and record collection vary greatly from state to state. (Appendix F)

Each state determines which immunizations are required for school and child care entry, at what ages the immunizations are required by, and how many doses of each vaccine are required. Most states, including North Dakota, follow age-appropriate immunization recommendations put forth by the Advisory Committee of Immunization Practices (ACIP), while some states determine their own requirements.

Currently, every state requires kindergarten immunization against pertussis for school entry except for Pennsylvania. Thirty-nine states require varicella vaccination. Usually, two doses of the measles, mumps, and rubella vaccine are required for school entry, but in Alaska, California, and Oregon, the number of required doses against each disease varies for school entry. In these states, two doses of the measles vaccine are required while only one dose of the mumps and rubella vaccines are required. However, many children in these states have received two doses against measles, mumps, and rubella because the vaccine against these diseases is only readily available as a combination vaccine in the United States.

Each state is also able to decide which types of immunization exemptions are allowed and the process by which these exemptions are granted. Every state allows for medical exemptions to vaccination, which can be granted to children whose immune status may be compromised, who might have a serious allergic reaction to a vaccine component, or who have had a prior adverse event following vaccination. Currently, West Virginia and Mississippi allow only medical exemptions. In July 2016, California will become the third state to allow only medical exemptions.

Religious exemptions to immunization are intended for parents whose religious affiliation or belief conflicts with vaccination. Currently, 48 states allow religious exemptions to immunization; in July 2016, only 47 states will allow a religious exemption. A recent review of the world's major religions found that most religions do not object to immunization and believe in preservation of life, caring for others, and duty to community. The review found that Christian Scientists and a subset of the Dutch Reformed Church may be two exceptions. The review did state that smaller denominations, sects, and branches of certain religions may oppose immunization, but these beliefs do not follow the overarching beliefs of the religion.²⁰

Lastly, personal belief exemptions to immunization are intended for parents whose personal beliefs conflict with vaccination. Personal belief exemptions to immunization are allowed for school entry in 18 states. In 2015, Vermont became the first state to remove personal belief exemptions from its vaccination law, and the state will only allow medical and religious exemptions beginning in July 2016.

The process for obtaining an immunization exemption differs in every state and ranges in difficulty to complete. North Dakota has been recognized as one of the easiest states to get a nonmedical immunization exemption.²¹

In many states, including North Dakota, medical exemptions forms must be signed by a healthcare provider when a child enters kindergarten and seventh grade. The healthcare provider must also indicate which vaccines are included in the medical exemption. In other states, such as Mississippi, the medical exemption form must be signed by a physician and then approved by the state health department. Some states require the medical exemption to be renewed yearly, while others only require the exemption be renewed for children in kindergarten and middle school.

Parents and guardians in North Dakota wishing to file for a religious or personal belief exemption need to sign an exemption form and turn it in to their child's school. This form is easily accessible online or by other means. On this form, parents must indicate which vaccines are being declined. In other states, the process is much more rigorous. For example, in Alaska, the religious exemption form must be notarized and renewed yearly. In New Jersey, a written statement from the parent explaining the religious belief is sufficient to file a religious exemption. Of the 48 states that currently allow a religious exemption, only seven^{iv} states, including North Dakota, require only a parental signature.

Some states allowing personal belief exemptions require parental education before an exemption can be granted. In Oregon, parents must visit with a healthcare provider or complete an online vaccine education module to be granted an exemption. In other states, the exemption form must be notarized or the exemption must be renewed yearly. Of the 17 states that allow personal belief exemptions, only three^v states, including North Dakota, require only a parental signature. The other 14 states require an additional step(s) beyond a parental signature.

In some states, accessing the exemption form(s) is laborious. In Texas, parents wishing to file a personal belief exemption must complete an electronic affidavit request. After submitting an electronic request form, the Texas Department of State Health Services Immunization Branch mails parents the appropriate forms for their request. In other states, the form is only available from a healthcare provider or a local public health unit.

North Dakota also allows a "history of disease" exemption for the varicella vaccination. A physician, parent, or guardian must sign the exemption form stating a child has had the chickenpox to be exempt from this vaccination. All states allow immunization exemptions for a reliable "history of disease", but in some states, proof of immunity via laboratory confirmation is required.

The ways in which immunization records and rates are collected and reported also varies by state. In North Dakota, all immunizations given in the state are entered into the state

^{iv} Arizona, Maryland, North Dakota, Oklahoma, Rhode Island, Washington, and Wisconsin require only a parental signature for religious exemptions. Other states require additional steps, such as a signature from a religious official, notary signature, or yearly renewal.

^v Arizona, North Dakota, and Wisconsin only require a parental signature. Other states require additional steps, such as yearly renewal, notary signature, or education.

immunization registry, the NDIIS. Immunization records from out-of-state can also be entered into the system when a person moves into the state. Across the country, each jurisdiction determines if and how immunizations are recorded in a database. Currently, a national immunization registry does not exist, but every state except New Hampshire does have an immunization registry. Some large cities also have their own registries, including New York City, Philadelphia, and the District of Columbia.

All North Dakota schools are required to collect immunization records from each student and report immunization and exemption rates to the NDDoH. Not all states conduct immunization surveys of their school populations. Some states sample the population to estimate overall immunization rates.

Every state sets their own laws regarding school enforcement of immunization requirements and possible exclusion of students who are noncompliant with state laws. Many states will exclude children from school who do not meet state immunization requirements, but policies and practices vary from state to state and even within states.

In the event of an outbreak, many states have determined that it is in the best interest of children with immunization exemptions if they are removed from school until the threat of the outbreak has passed. Twenty-seven states have the authority to exclude unimmunized children during an outbreak.⁵ Depending on the infectious disease causing the outbreak and the threat to the community, children could be removed from school for an extended period of time.

Literature Review: Immunization Rates, Exemption Rates, and Outbreaks of Vaccine-Preventable Diseases

As a result of immunization exemptions being widely available and parents claiming exemptions in increasing numbers, the United States has seen an increased incidence in the number of vaccine-preventable diseases, including measles, pertussis, and mumps.^{21,22} In many areas of the United States, immunization rates have fallen below 95%, the immunization rate commonly recognized as needed to prevent outbreaks of highly-infectious diseases.^{6,23}

Many factors have contributed to declining immunization rates and increasing exemption rates, including parental concerns about vaccines and the availability of immunization exemptions. Currently, many parents are concerned about the safety and efficacy of vaccines, the ingredients in vaccines, and the number of vaccines and doses of each vaccine given to children.²⁴ In addition to parental concerns, systematic processes can affect the effectiveness of a state's policy and can make the exemption process easier or harder for parents seeking an exemption to immunization.

Bradford et al ranked states on the effectiveness of their vaccination laws and policies as “most”, “somewhat”, “less”, or “least” effective. Then, the study compared states' pertussis rates against the effectiveness of their vaccine policy. It was determined the states with the most effective policies had lower incidence rates of pertussis.

In states where the process for obtaining an exemption is very simple, exemption rates tend to be higher; in states that make the process more burdensome or inconvenient, immunization rates tend to be higher. Omer et al compared exemption rates in states that allow and don't allow personal belief exemptions. The study also classified the process for obtaining an exemption as "easy", "medium", or "hard". The study showed significantly higher rates of nonmedical exemptions in states that allow religious and personal belief exemptions versus states that only allow religious exemptions. The study also found higher nonmedical exemption rates in states where the process of obtaining the exemption is "easy".²¹

Conversely, Olshen et al found that the availability of a personal belief exemption did not correlate with exemption-seeking among certain demographics and locales. In this study, researchers found that school immunization mandates were the main factor leading to higher immunization rates, highlighting the importance of school immunization requirements.²⁵

Because exemptions are widely available, some studies have tried to determine the factors that predict immunization exemption seeking among parents. Many studies have determined that exemption rates are higher in private schools.²⁶⁻²⁸ Other factors that have been correlated with higher exemption rates include parents who are wealthy; have vaccine concerns, specifically about safety; have a distrust of or don't use traditional medicine; and have knowledge of someone who was injured by a vaccine.^{27,29,30}

In areas with low vaccination rates, vaccine-preventable diseases can make a comeback. Yang et al studied the relationship between vaccine exemptions and the incidence of vaccine-preventable diseases. This study found that states with more restrictive exemption policies had lower incidences of vaccine-preventable disease.³¹

In 2003, Arkansas revised their immunization policies by adding a philosophic exemption to vaccination. Exemption rates increased each year from 2003-2010, with an average increase each year of 23.1%. Nonmedical exemptions in this state do cluster geographically, but higher exemption rates have not yet been linked to an outbreak of a vaccine-preventable disease.^{32,33}

Adding personal belief exemptions to school exemption policies can be costly. Wells and Omer estimated the medical and nonmedical costs of pertussis disease in the state of Iowa with and without a personal belief exemption. They determined that the impact of adding a personal belief exemption in Iowa would be a 50% increase in medical and nonmedical costs per year; this includes an expected 50% increase in pertussis cases in Iowa, which would be expected due to the addition of the personal belief exemption.^{34,35}

Focus Groups and One-on-One Interviews

In total, 23 focus groups and 13 interviews were conducted with 189 immunization stakeholders in seven cities with participants from 24 counties across the state. Of the 23 focus groups conducted, eight groups were school administrators, nurses, and staff; six groups were healthcare providers, clinic nurses, and staff; three were parent groups; five were public health groups; and one focus group was done with state employees. Legislators and other key stakeholders were also interviewed as part of this process. (Appendix G)

Schools:

Overall Thoughts

In visiting with representatives from 11 school districts across the state, the CIRE learned that the enforcement of immunization requirements is at the discretion of each school or school district. Each school district shared their varying philosophies and practices surrounding school enforcement of immunization requirements, ranging from the exclusion of children noncompliant with state immunization requirements to very minimal enforcement of school immunization requirements.

School administrators and staff were asked about their thoughts on the current state immunization requirements for school entry. There was nearly universal support from administrators, nurses, and staff for school immunization requirements, with school representatives recognizing the importance of childhood vaccinations. Although most school representatives understood the importance of immunizations, administrators disagreed over whether or not schools were the most appropriate avenue for enforcement of school immunization requirements.

Immunization practices, specifically enforcement of immunization requirements, were often reflective of the philosophies of local superintendents. Some school administrators shared that providing a safe and healthy school environment was a top priority for them. These administrators believed immunization compliance is a part of this environment, which is ultimately required for successful learning. Other school administrators shared a very different perspective, stating how enforcement of immunization requirements by excluding children from school presents a philosophical conflict. These school administrators shared that it is their mission and job to educate students, and by removing children from school for noncompliance, they are not able to fulfill their mission as educators. While many school districts are displeased that enforcement falls on the schools, many understand why schools are in charge of enforcement and have accepted their role in the process.

The schools strictly enforcing immunization requirements and excluding noncompliant children are setting their own exclusion deadlines rather than following the 30 day exclusion deadline outlined in the N.D.C.C. Because there is not a consistent immunization enforcement deadline being practiced around the state, some school employees expressed support for a statewide exclusion deadline, rather than a 30 day grace period. School employees suggested this deadline even though a 30 day grace period is already in law and schools believed 30 days was sufficient time to collect immunization records and enforce the state policy.

School officials noted how easy it is to obtain an immunization exemption in North Dakota and believed the process of obtaining an exemption should be changed. Some schools acknowledged they have offered the immunization exemption form to parents as an option for immunization compliance, even though they have been discouraged from doing so by the NDDPI. Additionally, school staff shared that parents have signed the form out of convenience when an immunization record could not be found or making an immunization appointment for their child

was not convenient. School administrators and staff strongly supported a policy change that would require immunization education from a vaccine expert before parents could file a religious or personal belief exemption. They believed requiring education in order to obtain an exemption will remove the convenience factor of simply signing the exemption form; if parents are required to visit with a healthcare provider, school officials felt many parents would opt to receive the vaccines.

Schools stressed the need for increased access to immunizations, whether it be through school immunization clinics or extended hours at public health units and local clinics. School administrators shared how convenience and scheduling are often barriers for noncompliant children and their families.

One group discussed ways to motivate parents to complete their child's immunizations, noting that parents are ultimately the ones responsible for meeting all school requirements, including immunization compliance. They believed incentives and penalties for immunization compliance should be aligned with motivators of parents. One school group suggested denying benefits of the Supplemental Nutrition Assistance Program (SNAP) to parents whose children who are not compliant with immunization requirements. This school group did note that families receiving SNAP benefits are not the only families not compliant with immunization requirements, and that other incentives and penalties may be needed. Other schools noted that exclusion of children from school, loss of child care, and taking time off of work was enough of a motivator for many parents to bring their child into immunization compliance.

During the focus groups and one-on-one interviews, school participants made one thing very clear: if any changes are made to immunization policies and practices in the state, school administrators and participants do not want more responsibility put on the schools. Schools feel like many responsibilities outside of education are given to them, and extra tasks are often not financially compensated.

Challenges

When asked about challenges associated with enforcing school immunization requirements, schools stressed the ambiguity in interpreting the North Dakota Century Code and Administrative Rules. In North Dakota, some requirements are clearly stated, while the interpretation of other requirements is left up to the individual school or school district. For example, the N.D.C.C allows a 30-day grace period after the start of school for students to get caught up on their immunizations. The N.D.C.C. does not articulate how those 30 days should be calculated, whether it be 30 calendar days, 30 week days, or 30 school days. Another area of ambiguity is whether or not schools should admit students who are not currently up-to-date on their immunizations. Schools believe the N.D.C.C. contains two conflicting statements, "A child shall not be admitted to school..." and the allowance of a 30 day grace period for those not compliance with state immunization requirements.

Another area of confusion is the seventh grade immunization requirement for the tetanus, diphtheria, and acellular pertussis booster (Tdap) and meningococcal immunizations. Currently, North Dakota Administrative Rules only require these vaccines for seventh grade entry, and in

subsequent school years, the immunizations are not required for school entry. Some schools are requiring the vaccines for all students in grades seven through twelve, while other schools are only requiring the vaccines for seventh graders. In addition to seventh grade, school nurses recommended that the North Dakota Administrative Rules language be changed to require the meningococcal and Tdap immunizations for students in grades eight through twelve, if not immunized at seventh grade.

Lastly, schools shared their confusion in determining an “institutional authority” in each school and defining the role of this person. Overall, schools would like to see more guidance from the NDDPI and NDDoH regarding interpretation of the N.D.C.C. and Administrative Rules.

Schools in specific parts of the state identified populations needing to overcome barriers to become compliant with state immunization requirements. In the western part of North Dakota, which has recently seen a rapid increase in population due to an oil boom, many out-of-state and out-of-country children have entered the school systems. Often times, parents of these children do not bring their immunization records with them to their new school when they move. As a result, parents are not always able to track down their child’s immunization record and deliver it to their new school in a reasonable amount of time. This has hindered the schools’ ability to collect immunization records and enforce immunization requirements.

In the eastern part of the state, school representatives recognized the New American population as a group that has to overcome many barriers to become compliant with immunization requirements. Stakeholders shared that education, language, and transportation are large barriers for this population; they are often unaware of the immunizations they need for school entry, they face language barriers when communicating with school officials and healthcare providers, and they may lack transportation to and from their healthcare provider. It is important to note that these families are not purposefully not up-to-date on their immunizations, and once they learned about the need for immunizations, school officials noted that they often became compliant with immunization requirements in a timely fashion with the help of many school and healthcare staff. Schools in one region also mentioned the main healthcare provider for many of the New Americans is understaffed, ran out of one key immunization during the past school year, and fell behind in entering immunizations into the NDHIS. This was problematic for schools and New Americans, and additional steps were taken by school staff to determine and achieve immunization compliance for affected children.

In addition to collecting immunization records for students, schools expressed challenges with tracking immunization schedules and records for kids who move into and out of the school district. For example, some school districts are seeing over 1,000 new students enter during the school year. With children moving into the school districts every day, school staff are continuously collecting immunization records, determining compliance, and tracking progress towards full immunization within the 30 day grace period. For school staff, this is an extremely tedious process.

Schools without school nurses expressed the challenges that school secretaries must overcome to determine immunization compliance. School secretaries are often not trained in medical terminology or the reading of immunization records, so determining immunization compliance

for students can be a challenge. While some schools without school nurses have working relationships with local public health units, other schools without that working relationship must be able to determine immunization compliance for their students, and this can be a challenge when reading immunization records from North Dakota and sometimes other states and countries.

Lastly, some schools shared they were either unaware of their responsibility to enforce immunization requirements in the homeschool population or how to enforce immunization requirements for homeschooled students. According to the NDDPI (G. K. Marback, written communication, March 2016), homeschooled students make up 2.6% of North Dakota's student population and are required to submit immunization records to the school districts in which they file their statement of intent to homeschool. In some school districts, parents of homeschooled children are not turning in immunization records, and currently there is not a way to enforce the requirements since the students do not attend school. One superintendent said, "When somebody registers as homeschool we have to ask them for their immunization records. What are we supposed to do with them? I don't know. I have no idea. I don't know if we are supposed to set up a database and track it. But why the district is responsible for doing any type of monitoring for homeschooled students is beyond my imagination. It's a process that has no enforcement ability."

In some instances where a home schooled child enters a school system for extracurricular activities or certain classes, the students can be excluded from school activities for being noncompliant with state immunization requirements. Overall, schools said they would like more guidance on how to more effectively enforce immunization requirements and report immunization rates in the school immunization survey for the homeschool population.

Non-Enforcing School Districts

In the schools not regularly enforcing immunization requirements, school administrators voiced that they did not agree with and had concerns over excluding noncompliant children from school over a public health issue. A school superintendent said, "We want the kids in school. We want them there because we want to educate the kids. We don't want them kicked out of school or not allowed to come to school." It was also mentioned that vaccinations are something parents are responsible for, and by excluding noncompliant children, a school is excluding a child for something the parent is ultimately in charge of and responsible for. A superintendent said, "As educators, it's hard to keep a kid out of school for something their mom and dad didn't do. It's not the kids fault they aren't immunized. It's mom and dad's fault."

Administrators who shared these sentiments mentioned many, but not all, of the students noncompliant with state immunization requirements came from households with low socioeconomic status or poor home life. One superintendent said, "The kids who need to be in school the most are the ones who don't have the records." A principal echoed the superintendent's thoughts by asking, "Are these kids better off at home or are they better off at school?" Administrators also mentioned that school is the best place for these children; they are safe, warm, and comfortable, receive a meal, and are able to learn. One principal stated, "The

ones that are not immunized are the ones who need to be at school because school is warm, school is safe, and we feed them.”

School officials also shared concerns about the number of children that would be missing school after the enforcement deadline and the number of days children might be out of school. They are concerned with the number of children that would not be up-to-date on their immunizations and be excluded from school, requiring extra work from teachers and other school staff once a student returned from exclusion. They also worried about children missing too much school and not meeting school requirements for passing classes and graduation. Finally, schools shared that state and federal funding is partially based on school attendance, and they worried that excluding children for being noncompliant with immunization requirements would have a negative impact on the amount of funding the schools receive.

Lastly, some schools shared they have received mixed messages about the enforcement of immunization requirements from the NDDPI. In the past, schools had received correspondence from the NDDPI outlining the N.D.C.C. requirements and the importance of immunizations. School superintendents were notified again at a conference in fall 2015. When schools followed up with the NDDPI about potential financial consequences of not enforcing immunization requirements, superintendents were told “They [NDDPI] may do this.” One superintendent was told, “We don’t want to withhold money from you. We aren’t going to withhold money from you. We want you to get the immunizations. We want you to keep asking. We don’t want you to give up. We want you to keep making an effort. As long as you’re making an effort, that’s what we want you to do.”

Enforcing School Districts

Focus groups were conducted with two school districts that routinely require students to be compliant with state immunization requirements. In these schools, parents are given a deadline by which students must be compliant with state immunization requirements. Those students that do not meet immunization requirements by the deadline are excluded until they become compliant with state laws. Most schools in the state are not enforcing immunization requirements to this extent.

Leadership in the two school districts that regularly enforce immunization requirements shared that maintaining a safe and healthy school is a top priority for them, and having all students in compliance with North Dakota’s immunization requirements is one small piece of that priority.

A superintendent in an enforcing school district said, “I think we are charged with providing a safe environment for our students, and that includes students who are medically fragile or vulnerable. We have an obligation to provide a safe environment for them, so it starts with the doorstep. We have to make sure our kids are healthy and immunized before they can get into our school setting.” Another administrator added, “I do think our priority is to educate kids, and [immunizations] is certainly part of it. And it’s our state law. If we don’t have that feeling in our school that every child is safe, they can’t learn.”

School officials in enforcing schools shared that very few children, if any, are excluded each year. When asked about the students excluded for noncompliance, a principal said, “It’s a quick turnaround.” Another principal reflected, “They are back in school the next day.” Representatives from enforcing schools shared kids are rarely out of school for more than a few days.

Study Opportunity

The NDDPI and NDDoH recently emphasized the importance of immunization requirements for schools and the laws mandating school enforcement in North Dakota. In October of 2015, school superintendents attended a statewide conference where they learned about North Dakota’s legal requirements for immunization. School superintendents were informed by North Dakota’s Assistant Attorney General that by not enforcing immunization requirements and not excluding noncompliant children, schools were not abiding by N.D.C.C. and could face legal and financial consequences; specifically, they were told foundation aid, or funding for the schools, could be withheld for every student that is noncompliant with the law. Upon hearing this, some school districts in the state decided to more strictly enforce immunization requirements to the extent of excluding children noncompliant with North Dakota law during the remainder of the 2015-2016 school year.

The CIRE met with representatives from two large school districts deciding to more strictly enforce immunization requirements after the Annual School Boards Association Conference with school superintendents. Administrators and staff from these two schools acknowledged the laborious process that took place when trying to collect missing immunization records, determine compliance, and contact the parents of children needing further immunizations. In many schools, the use of PowerSchool, a software for managing school data, aided in this process.

Schools more strictly enforcing immunization requirements for or during the 2015-2016 school year began sending out letters to parents in the fall of 2015 letting parents know which immunizations their child still needed and the deadline by which the immunizations were required. Schools also had school principals, nurses, and administrative assistants make phone calls home to families. Schools set exclusion deadlines in which children had to be fully compliant with North Dakota immunization requirements or they would be removed from school.

Because many schools had never enforced immunization requirements or had not done so for many years, many students in both school districts were noncompliant with state requirements. In one large school district, over 6% of children were either missing immunization records, partially immunized, or not immunized when stricter enforcement of immunization requirements began in November 2015.

The CIRE followed up with the school districts to see how the enforcement and exclusion processes went and how many children were excluded. These school districts had previously expressed they thought many children would be excluded from school once immunization requirements were enforced. In reality, very few students were ultimately excluded from school. In total, only 13 students in one large school district (0.14%) and 27 students in another large

school district (0.24%) were excluded on the deadline. Most of the excluded students became compliant and returned to school within a few days.

School Nurses

It is important to note the role of school nurses and the appreciation schools have for their role in immunization enforcement. In the two schools regularly enforcing immunization requirements and the two school districts enforcing immunization requirements for the first time in 2015, all have school nurses on staff and administrators recognize the impact they make in this process. In these school districts, school nurses are in charge of reading immunization records, determining immunization status, and filling out the annual school immunization survey for the NDDoH. In schools without school nurses, the completion of these tasks often falls to a school secretary or local public health unit, depending on the relationship between the two entities.

Schools without school nurses acknowledged that limited resources did not allow them to have a school nurse on staff to assist with immunization practices. Some schools were open to the idea of contracting nursing services through the local public health unit to assist schools in determining immunization compliance and completing the school survey, while other schools did not believe adequate resources were available to add nursing services in their school district.

Policy Recommendations

When asked whether or not North Dakota should allow three types of immunization exemptions, opinions of school employees were mixed. Some school officials believed only medical exemptions should be allowed for school entry, with one principal stating, "I would strongly encourage our legislators to eliminate all but the medical exemption." Others thought religious and/or personal belief exemptions should continue to be allowed.

School officials were also asked whether or not immunization exemptions should be renewed by parents yearly. Most school employees were not in favor of having exemptions renewed every year. They thought yearly renewals would just cause more paperwork for school staff, add expenses, and not result in more children being immunized, especially considering that the current process in North Dakota only requires parents to sign a form. When schools were asked about requiring a notary's signature on immunization exemption forms, most agreed that notaries are readily available, and that this extra step would not deter many parents from seeking an exemption or positively impact immunization rates.

Lastly, school officials were asked whether or not immunization rates should be published by school. Most schools administrators and staff did not support immunization rates being published by individual school. One superintendent mentioned that publishing immunization rates by schools is ranking a school or an educational setting on a public health matter, and this would be inappropriate. "I see it as any time you start ranking schools, it's going to be interpreted by some as a good school or not if you put a label on it like that. It could have a negative impact on all of our schools. I'm always cautious about that." Another superintendent echoed those statements, "I think it might be unfair. If two principals did the same job (enforcement) but have different

immunizations rates, through no fault of their own, one's rate are going to be much lower.” Another principal added, “If it doesn't impact learning, then no [I don't support it]. I don't think it would have an impact [on immunization rates].”

Other school officials questioned the effectiveness of publishing immunization rates by school. One superintendent said, “If publishing rates had an impact on immunization rates in the states that were doing it, they would be at 100%.” School nurses added, “I'm afraid parents would say, ‘Oh, I can make them exempt?’ I don't know how the data would be a positive or cause a positive impact at all for the district.”

Because North Dakota is a very rural state, some school nurses worried about data privacy. “Schools are too small. Parents would figure out who these [unimmunized] kids are and they would be discriminated against.” Lastly, some school officials questioned whether or not this information would be sought out by parents and what parents would ultimately do with the information. In North Dakota, only some schools have open enrollment. As a result, if a parent's child was in a district or school with low immunization rates, they may not be able to move their child to another school.

Some school officials offered their own suggestions for how to improve immunization policies in the state.

Some school nurses and one superintendent supported a policy where children would not be able to start school without an immunization record on file. A superintendent voiced, “They don't get in the door without the paperwork being complete.”

Other educators did not support a policy change requiring exclusion on the first day of school and talked about parents needing more flexibility. “We are supposed to be educating. Our job is to educate them. Why do we have to look at parents on the first day of school and say, ‘No, take your kid home.’” Other school staff said children are often very excited for the first day of school, and if a child is not allowed to attend school because of a missing immunization record, they may have a negative image of school and retain those thoughts throughout their school careers.

A superintendent shared his concerns about this suggested policy change. “I can't imagine the trauma that is going to be on a five year old. All dressed up, brand new clothes, brand new shoes, brand new backpack, coming to school for the very first day, and one of my principals says, ‘No, I'm sorry you have to go home.’ We want kids to see school as a welcoming place. We want kids to be excited to come to school. If we have to turn away kindergarten kids because they don't have their shots, we probably just created at-risk students who are now at risk for not graduating from high school because of the negative experience on their very first day of school.”

Two school superintendents who did not believe schools are the best place to enforce immunization requirements to the point of exclusion suggested schools could collect the immunization records and data each school year and then pass the list of noncompliant children on to another government agency to enforce. Law enforcement, health departments, and social services were recommended as other agencies for enforcement.

A superintendent shared his ideas, “I know it’s a difficult thing, but our job is to educate the kids. I don’t have a problem having my principals track these things, but the enforcement needs to fall [in] some other department at some other level. I don’t have a problem with trying to help track it, but once we’ve tracked it, it should become someone else’s issue to deal with the enforcement. It either becomes the job of the Department of Health or the Department of Social Services.”

Additional Recommendations

Some school staff acknowledged the schools’ change in immunization enforcement practices was a surprise to their local communities, and healthcare providers and public health were not always willing or able to handle the increased demand for immunization appointments. These staff members expressed how they thought a statewide announcement to local public health units and healthcare providers should have been shared concurrently with the announcement to school superintendents, so vaccine providers could adjust their schedules, supplies, and staff accordingly.

Most of the large school districts in the state are using PowerSchool to collect and record immunization records and complete the school immunization survey. School staff shared they would like to see PowerSchool linked to the NDIIS. This would allow the NDIIS data to load in PowerSchool, saving public health nurses, school nurses, and school staff time spent inputting individual immunization records into PowerSchool.

Some schools also suggested changes to the school immunization survey filled out each fall. Currently, schools report the number of children in each grade, the number of children with medical, religious, and personal belief exemptions, and the number fully vaccinated against each disease. Schools would like to see an “in progress” column added to the school survey to track the number of students who are in the process of becoming fully immunized but are not fully compliant. While some school employees favored this change, others believed it may cause confusion and was not a worthwhile change.

Public Health

Overall Thoughts

In visiting with public health nurses and employees across the state, many expressed that the overall opinion of immunizations among parents and families in their communities was favorable, while also noting the bias that may be occurring in the populations served by public health. One nurse said, “I would say the majority of the people we see are in favor of immunization. I think the reason behind that may be in part that they are coming to public health for immunizations.” Public health employees shared how very few people are truly against vaccinations. One nurse said, “It’s really a small group of people that are unimmunized.” The increasing number of parents requesting an alternative immunization schedule was also noted in many public health focus groups.

Public health nurses shared social media and internet search engines have had a negative impact on the perception of immunizations. Many public health employees also shared that certain chiropractors in their respective districts have had a negative impact on immunization rates, confidence, and uptake. Public health nurses did acknowledge that outbreaks of vaccine-preventable diseases increase the number of children coming in to receive immunizations against the diseases causing outbreaks around the country.

Public health employees stated that the reason parents are not getting their children immunized is not because parents do not believe in immunizations. Instead, they shared the many barriers that are impacting immunization rates, including access to healthcare, scheduling, and convenience. One public health nurse stated, “We called parents whose children weren’t up-to-date with their immunizations. For the most part I would say they were open to immunizations. It just wasn’t a priority to get them taken care of.” Another nurse shared, “The kids that aren’t up to date – it’s not as much scheduling as it is other barriers in the home - like drug or alcohol abuse. It’s not personal beliefs. It’s other issues.”

Working Relationships with Local Schools

Many public health nurses work closely with schools around the state for immunizations, and mentioned schools are inconsistent in enforcing immunization requirements and making immunizations a priority.

The relationships between local public health units and local schools in the state vary greatly. In the rural areas of the state, many local public health units are working closely with the schools on immunizations. Public health units are assisting with immunization record compliance checks, sending letters to families with noncompliant children, and assisting in the completion of the school immunization survey. Many local public health units are also doing school immunization clinics to provide catch-up vaccines to children missing immunizations, influenza vaccinations, and other recommended vaccinations. Many public health nurses noted the success of school immunization clinics in small communities.

In the urban areas of the state, the local public health unit’s involvement in the schools varies. Many of the larger schools have their own school nurses, or their school nurses are contracted through the local public health unit. Most of the urban areas in the state are not doing immunization clinics in their schools for school-required immunizations through the local public health unit, although there was mention of some influenza vaccination clinics occurring throughout the state. Public health units said that immunization clinics in large schools are laborious and time-consuming and staffing is limited.

Public health employees stated that before the school superintendents’ meeting with North Dakota’s Assistant Attorney General in October 2015, immunizations were not a priority for many schools. One public health nurse noted, “It became a priority. When it became a priority from the top, everyone was willing to do what they needed to do. It was not seen as a priority

before.” Another nurse shared how she immediately received phone calls and emails from superintendents in her district, stating the urgency with which immunization compliance needed to be addressed. One public health nurse met with her local superintendent “the next day.” Because of the new emphasis on enforcement, many public health units around the state noticed a significant increase in children coming in to public health clinics to receive immunizations.

Policy Recommendations

When asked about the current immunization exemption process in the state, public health employees universally shared that the process for obtaining an exemption is weak, too easy, and should be made more difficult. Public health employees also stated they did not know the difference between a moral and philosophical exemption. They would like to see those options combined on the immunization exemption form or combined to be called a personal belief exemption or maybe a conscientious exemption.

Public health employees were asked about potential changes to current immunization policies. Nearly all public health staff agreed that making the process for obtaining an exemption less convenient was important. One nurse said, “If you make it harder, more people will get the immunizations.”

Public health employees strongly favored changing the immunization exemption form. They also strongly favored a policy change requiring parents to receive immunization education from a vaccine expert before a nonmedical exemption could be filed. While they strongly favored healthcare providers as the vaccine educators, many public health nurses acknowledged they would be willing to provide the education to parents seeking an exemption. Some public health employees believed clinic nurses within a healthcare system could also provide this education to parents.

Public health employees stressed how they felt the education provided to parents needs to have a consistent message across the state. They suggested the creation of a check list of items that healthcare providers or public health nurses would need to go over before signing the immunization exemption form. Specifically, public health nurses would like parents to acknowledge they are aware of the consequences of non-vaccination, such as the potential to be removed from school for extended periods of time in the event of an outbreak.

Public health nurses did not agree on whether or not publishing immunization rates by school would be successful. While some liked the idea, others expressed publishing immunization rates might not solve the problem of low immunization rates and no school enforcement. “I think in some situations, especially being so rural, it would cause even more problems.” Another nurse stated, “Schools are too small. Parents would figure out who these kids are and they would be discriminated against.” Public health nurses were split on whether yearly renewal of a nonmedical exemption would increase immunization rates.

Practice Recommendations

The creation and implementation of a national immunization registry was a sentiment repeated consistently in focus groups with public health employees. Many nurses stated they sometimes work for hours trying to obtain a single immunization record for a child from out-of-state. They would like to see a national immunization registry or the creation of data sharing agreements between North Dakota and states where many of the new families are migrating from.

Public health employees would also like to see the NDDoH create a template letter for schools to use when sending out letters to parents of children who are noncompliant with state immunization requirements. They said current immunization reminder letters from the NDDoH are very helpful. They would also like to see the NDIIS have communication capabilities with PowerSchool since many public health nurses work with schools in some capacity.

Some public health employees would like to see additional funding for the local public health unit to contract with the schools on immunization record collection, recording, and reporting. Some would also like to see hepatitis A and other childhood vaccines required for school entry. Public health nurses also would like to see North Dakota Administrative Rules language changed to articulate that the Tdap booster and meningococcal vaccinations are required for all students entering seventh grade through twelfth grade. Public health nurses also mentioned there is no option in the NDIIS to properly categorize children who are immune to hepatitis B.

Public health nurses did share their frustrations with the communication of electronic medical records and the NDIIS. Specifically, they mentioned that the system's ability to forecast immunization schedules and review the schedules of previously administered vaccines does not work in electronic medical records, misleading some providers only using the electronic medical record to determine immunization compliance. They also shared their continual problems with the NDIIS, some noting that it crashes as often as once per day.

Lastly, public health providers believed vaccine ordering could be done more efficiently. They believed vaccines could all be purchased privately and the state could reimburse the local public health units for the vaccinations given to those who are eligible for the Vaccines for Children program. They believed a change like this would save the local public health units' time in the fall, when they typically have to wait for delayed state vaccines to start immunization clinics.

Healthcare Providers

Overall Thoughts

Healthcare providers stated the majority of parents immunize on schedule and are in favor of immunizations. Many healthcare providers mentioned that over the last few years, the number of parents choosing an alternative vaccine schedule was increasing.

One pediatric clinic in the state does not see patients whose parents refuse vaccines. In this practice, the decision to discharge non-vaccinating families from the clinic was a decision that was made to protect children who are sick or cannot be immunized. There is a small, but growing, trend nationwide to exclude unimmunized patients from medical practices.^{36,37}

Nationally, the American Academy of Pediatrics does not support discharging patients based on a parent's decision to refuse vaccination.³⁸ The NDDoH also discourages this practice.

The use of internet search engines and the influence of social media were mentioned by healthcare providers frequently as factors affecting parents' confidence in vaccines and ultimately vaccine uptake. One healthcare provider said, "There's a lot of misinformation out there." Healthcare providers also talked about the "strong chiropractic hold" in the state and the "big influence" chiropractors have on parents regarding vaccine confidence. It was mentioned in many cities throughout the state that certain chiropractors are spreading anti-vaccine sentiment, holding vaccination seminars, and distributing false information about vaccines.

They shared that outbreaks of vaccine-preventable diseases around the country motivate parents to bring their children in to the clinic for immunizations, even parents who have never immunized before. One pediatrician shared this story, "I had one family that had forever done no vaccines. After the measles outbreak in California, they came in and I caught all four of their kids up."

Healthcare providers stated that they rarely see diseases like chickenpox anymore, making history of disease exemptions very rare. Some providers are filing a history of disease exemption for hepatitis B immune children, although North Dakota state law only allows for history of disease exemptions for varicella. Medical exemptions to immunization are extremely rare, with many providers stating they have never seen a child needing this type of exemption. Providers throughout the state mentioned problems with the NDIIS and electronic medical record communication. They shared their desires for a national immunization registry, which would ultimately help track immunization records of North Dakota's transient populations. |

This year, healthcare providers noticed an increase in the number of parents bringing their kids in to the clinics to be vaccinated, attributing the increase to the school systems deciding to more strictly enforce immunization requirements. One provider said, "Something happened, because we had a pile of kindergartners in [for their immunizations]." A North Dakota parent, after learning her child could be excluded from school for an extended period of time in the event of an outbreak, told her healthcare provider, "I can't afford to be out of work. My kids are going to be immunized."

Policy Recommendations

Healthcare providers believed the process for obtaining an exemption in North Dakota was too easy, calling the policy "lackadaisical" and "worthless". Many stated they were unaware of how easy it is to get an immunization exemption in the state. One nurse stated, "I didn't know you could just sign a piece of paper."

Healthcare providers strongly supported a change in state policy to make the process of obtaining immunization exemptions more difficult. One physician stated, "It should be harder to refuse

vaccines than it is to get them. And it's not. It's simple. You sign the form and you're done." Another said, "I think stronger legislation is required to reverse this trend (of decreasing immunization rates)." A family medicine physician said, "I think most of us would love to see a tougher law that would allow fewer exemptions and didn't make it so easy." One pediatrician noted, "Even more than pediatrics, it's an issue of politics and state legislature."

Healthcare providers overwhelmingly supported a policy change allowing only medical exemptions in North Dakota. A pediatrician stated, "I don't think [nonmedical exemptions] should even be an option." If the current exemptions are kept in North Dakota, they supported policy changes making it tougher to receive a religious and personal belief immunization exemption in North Dakota.

One physician suggested parents wishing to file a religious exemption must submit a signature form a religious leader and documentation that a person's religion conflicts with immunization.

One common suggestion from healthcare providers was a policy change requiring parents to receive education before being able to file an immunization exemption. Healthcare providers believed this was very important, with one physician stating, "Parents don't understand the risks of not vaccinating their kids."

Many types of education were offered as suggestions. The most popular suggestion was requiring parents who are seeking an immunization exemption to meet with a healthcare provider (physician, physician's assistant, or nurse practitioner) or public health nurse in the state to receive immunization education. Some groups did suggest a clinic nurse could provide the education. Clinic nurses tended to support a change requiring healthcare providers to do the education, saying doctors have more success than the nurses in convincing people to get immunized.

Other providers suggested an online education module with a quiz at the end to test the parents' knowledge and comprehension of the material. At the end of the educational module, a certificate could be printed off that would be turned into the school and allow a religious or personal belief exemption. Another suggestion to educate parents was to hold a class on immunizations; parents wanting to file an exemption would need to attend the class (or classes) and show proof of attendance to receive an immunization exemption. The educator of the class could be a local healthcare provider, a public health nurse, or a standardized immunization education video could be shown.

Yearly renewal of the immunization exemption was also suggested many times and received overwhelming support as a change that would lead to higher immunization rates, especially if it was coupled with an educational requirement.

When healthcare providers were asked whether they would be willing to spend part of their practice educating parents about immunizations, the overwhelming response was "yes". One pediatrician stated, "It's part of my duty as a general pediatrician to care about the public's health. And when I talk to people that refuse vaccines, I'm saying, 'I'm talking about your child being at risk.' But I also consider the community, the kids at school, my own children. And I feel

like that's my job as a general pediatrician that I have to be concerned about the community. So if it takes me talking to somebody individually and they have to do that because the law requires it, that would be part of my practice I would value." Another stated, "I'd be ok with educating parents as long as we get the vaccination rates up, because I think getting the vaccination rates up is more important."

Healthcare providers suggested other policy changes, including a policy where parents would be required to write a statement to explain their beliefs. This statement would be turned in to a child's school to receive a nonmedical immunization exemption.

Healthcare providers were asked if they thought immunization rates should be published by school in North Dakota. Unlike the other stakeholder groups, many healthcare provider groups supported publishing immunization rates by school. When asked why they supported publishing immunization rates, healthcare providers stated that they like transparent data, they thought it might cause peer pressure among parents, and it might generate fear among the public. Many healthcare providers are parents themselves and mentioned they would like to know that information. One nurse said she would pick a different school for her child if she knew the immunization rates were low in her child's school. "It would cause a lot of uproar, especially if you don't have a choice [in the school your child attends]."

Some healthcare providers thought publishing school immunization rates might lower immunization rates if parents knew exemptions were available. Some thought bullying or exclusion might occur among children if parents were able to determine which children were not immunized. Others weren't sure if publishing the rates would make a difference. One doctor said, "I don't know if it would do any good."

One healthcare provider suggested removing the exemption form from the NDDoH website and requiring parents to visit a location to pick it up. "You have to make parents work for it. Most of the time they don't have to. Make them go to the courthouse and get their form notarized." Only a few healthcare providers thought a notary requirement for the exemption form would improve rates, with most healthcare providers believing it would only deter a few parents from signing the exemption form. Another provider suggested the immunization exemption form should only be available at a healthcare provider's office. "If we are making the change that providers have to sign it, then providers [should] have to provide the form."

Practice Recommendations

Healthcare providers would like to see a change in how state-provided vaccine is handled at the clinic level. They described this as a "two fridge" problem when giving vaccines, stating that having two fridges for vaccines, one for private and one for state vaccine, often leads to waste. They also mentioned the large amount of paperwork required for reimbursement of state vaccine.

Parents:

Overall Thoughts

Parents in the focus groups believed immunizations were important. Many parents stated that many other parents are misinformed about what vaccinations are and why children are recommended to have them. Parents shared that they believed immunizations protected those who lack proper immunity because of age and health conditions. They shared stories about vaccinating parents being worried about non-vaccinated kids that may come to school with a disease and infect others. They also shared the stress an outbreak might put on the staff in a school with children potentially being out of school for weeks.

Some parents believed schools should be more strictly enforcing immunization requirements, with a government entity overseeing their work and making sure they are following through with state laws. Some parents shared how the enforcement of immunization requirements is a large burden on the school systems. One mother believed public health was using schools as a scapegoat, stating she believed medical professionals should be tracking immunization rates of children, not the schools. She mentioned the burden placed on school secretaries, who are tasked with reading immunization records, sometimes from many different states and/or countries, with no medical training.

Some parents believed school nurses could help alleviate some of the pressure on school administrators and staff. Parents also suggested community immunization clinics and school clinics to help children stay up-to-date on their immunizations.

Policy Recommendations

Many parents shared they were not aware that immunization exemptions were available in the state and were subsequently surprised at how easy it was to obtain an exemption. One parent said, “I didn’t know you could get away with not [immunizing]. The whole exemption thing is new to me.”

When parents were asked whether or not they thought children should have to be immunized to attend school, the responses were mixed. While some believed parents should have rights, other parents disagreed and said immunizations are important for the public’s health and everyone should have to be vaccinated.

When parents were asked whether or not nonmedical exemptions should be allowed in North Dakota, again, parents were divided. Some parents believed only medical exemptions should be allowed, while others believed religious and/or personal belief exemptions should be available.

Parents almost universally agreed that the process for obtaining a nonmedical immunization exemption in North Dakota is too easy, and they supported an educational requirement for those parents who would like to obtain an immunization exemption. They believed parents should have to go over a checklist of items with a healthcare provider, such as the advantages and disadvantages of vaccinating and the risks of vaccinating and not vaccinating. They also believed parents should be told, “In the event of an outbreak, your child could be removed from school for an extended period of time.” They believed this education would help parents make a better-informed decision.

Parents believed immunization education could be provided by a healthcare provider, public health nurse, or school nurse. One parent suggested a non-biased person provide the education, such as an osteopathic physician, an alternative provider, or a government official. They also believed an educational video could be created and shown in place of receiving education from a vaccine expert. Parents suggested vaccine education session(s) or educational video(s) could be done with parents seeking an exemption on nights when parents are engaged with the school system, such as registration, back-to-school nights, and parent teacher conferences. Other parents suggested a quiz at the end of the educational video to gauge learning.

Parents were also asked about the potential impact of having to renew nonmedical exemptions each year with their school district. Some agreed it would help increase immunization rates, while other parents stated that if the process does not change and parents are only required to sign a form, it becomes more paperwork and work for the schools and may be extra work for healthcare providers.

When parents were asked about publishing immunization rates by school, their responses were mixed. Some parents were in favor of publishing immunization rates by school, stating it helps with awareness. Others did not see its benefit, believing it could cause feuding parents and kids would switch schools, all with no positive impact on immunization rates.

One parent recommended that children should not be able to start school without an immunization record on file, while other parents believed the immunization exemption form should only be available at a healthcare provider's office or at the local public health unit. These parents believed this change would encourage parents to seek out information, or if parents were filing the exemption simply out of convenience, they may be more willing to get the immunizations if they have to obtain the form through those offices anyways.

Legislators:

Overall Thoughts:

Legislators all believed children should be immunized, and most believed the school systems were the appropriate place to enforce the school immunization requirements. One legislator said, "I believe it's appropriate. If not the schools, who? Who else can put that type of pressure on a parent who is just being lackadaisical about it or anything even if they are not sure or they are believing rumors? I don't know who else to really put that pressure on."

Another legislator stated, "I believe it's appropriate. Enforcement is an appropriate role for the school because non-vaccination and epidemics would directly affect them. It is the schools' jobs to educate. That's true. But if kids are home sick and other things are totally disrupting, you are not educating ideally either. To me, schools can't use that argument."

A different legislator shared, "Should schools enforce? I think it is the logical place to go. It may not be the best, but it's where you get at all of them. I like it because it tends to work. How else will you get [to] everyone? School is the appropriate place because kids go to school. Using that

as your place of enforcement is probably the best place to go right now. I don't see one that's better.”

One legislator voiced a very different opinion on the enforcement of school immunization requirements, believing the enforcement of immunization requirements should not be the responsibility of schools. “A lot of the responsibility falls on the superintendent of the schools now, which I think we need to change. The school can report that this child is not compliant but I don't see where the responsibility and the liability should end up with the school district.”

In visiting with legislators, most believed leadership within the NDDoH and NDDPI strongly supported immunizations, immunization requirements for school entry, and enforcement of school immunization requirements.

When questioned about why they believed children were noncompliant with immunization requirements, one legislator pointed to parents not making immunizations a priority and taking full responsibility for their child's health and well-being. “It's really the parents' responsibility, not the school districts. We need to put it on them. It's not a priority in their lives, I'll tell you that. They are just plain procrastinators.”

Another legislator pointed to scheduling barriers, convenience, and finances as reasons that parents were not fully immunizing their children. “If it were for financial reasons...they tend to be the ones who don't have great flexibility in their work schedules either. I could see why that could be a bit more of a problem.”

Lastly, a legislator also shared that parents who are refusing immunization “are coming from the position of ignorance and putting other kids in danger.” Legislators repeated the sentiments of other focus groups; parents are using internet search engines and social media to look up immunization information, and as a result they may be receiving false information and are choosing not to vaccinate.

Practice Recommendations

Upon reviewing North Dakota's school immunization data, one legislator was quick to point out that a large percentage of kindergartners are unaccounted for in the school immunization survey data because of noncompliance. “The question is, ‘Why are we letting people into kindergarten without their immunizations?’”

Legislators recognized how easy the current process for obtaining an exemption is, and mentioned that exemptions have gone up for several reasons. The legislator mentioned above pointed out one of the reasons, “When a child presents to kindergarten and he doesn't have all of his immunizations, somebody at the school sticks that [exemption] form in front of the parents to sign.”

This legislator also strongly believed the NDDoH should work closely with schools and the NDDPI to enforce school immunization requirements, as that will give the state its biggest increase in immunization rates. “Even if you eliminated one hundred percent of the exemptions,

you would increase your rate by 3%, which wouldn't bring it up much. There are other avenues that we could use to spend our time and energy on more efficiently than to try and change the exemptions. I think since our exemption rates are [about] 3%, and some of those we know are because somebody just sticking the [exemption] form in front of the parents...that it seems to me it's kind of the wrong approach to spend time and energy legislatively on the change in the form for the options of people to make those exemptions. I think we ought to focus on the other avenues which are through the NDDPI, education of the superintendents and making that nurse available to give those immunizations when the kids are coming to school."

Legislators noted that the NDDPI, the School Boards Association, and school superintendents all need to be engaged on this issue. A legislator said, "I think the school leaders being on board with this is important. Another followed up and said, "We should talk a bit more about the seriousness of vaccine-preventable diseases and outbreaks and get the schools on board. It would go a long way towards solving our problems."

Two legislators shared that since the NDDPI has the ability to withhold foundation aid, the legislature needs an agreement from the NDDPI to do just that. If the NDDPI is not willing to withhold funding from schools, the legislature alternatively could say, "You have to withhold the money." As a follow-up, the state legislature could take additional steps if the NDDPI did not begin enforcing immunization requirements and withholding funding from schools with noncompliant children in attendance.

Legislators also identified areas where the NDDoH and local public health units could assist with immunization practices. They suggested the NDDoH could provide trainings to schools around the state, ultimately being responsible for training schools on best practices for enforcing immunization requirements. Legislators also recommended that local clinics and public health units could have more immunization clinic dates and options for parents who still need to immunize their child.

When asked about designated funds from the state for school nurses, a legislator said, "It's unlikely that the state legislature will approve enough money for that. However, it might be that the state could encourage these schools to have a nurse available under contract, for example, for the first two weeks of the school session to get those immunizations when the kids don't have them." Another legislator added, "It seems to me that any school that really cares about this will figure out how to budget, even for two weeks, for someone to assist with this particular new important thing. There's extraordinary, positive impact on students in the long run if they get immunized. So, there just needs to be a little more engagement with the School Board Association and the superintendents with this."

Lastly, one legislator acknowledged the work of the schools and the number of things they are tasked with accomplishing in a given year. Legislators made a point to not make immunization requirements more of a burden on the schools than they already are.

Policy Recommendations

Legislators were asked about potential policy changes in the state regarding immunization exemptions. First and foremost, they did not believe North Dakota legislators would remove religious and personal belief exemptions from the N.D.C.C. Legislators referred to North Dakota's "culture of independence" and parents' mentality of "wanting to choose what is best for their child" as reasons the state legislature would not make this change.

They did agree the current process of signing a form to obtain an immunization exemption was too easy. They suggested a number of changes, ranging from where the form can be accessed to who needs to sign it.

Every legislator agreed making parents receive education on vaccines before they could file a personal belief exemption would make a difference in the state. They believed the education could be provided by a healthcare provider, including physicians, physician's assistants, and nurse practitioners in the state. They also believed public health nurses could provide vaccine education. Legislators also mentioned adding language to the exemption form where a parent must acknowledge the risks associated with not vaccinating and potential outcomes of claiming an immunization exemption.

One legislator believed making a parent at the school receive another signature on the exemption form would make a difference, whether the parent has to go and visit with a religious official or a healthcare provider. This legislator thought the parent should have to leave the school to get another signature if the forms are being handed out. Legislators believed requiring a notary for immunization exemptions was not a barrier; believing this was not enough of a roadblock to hinder parents who are seeking an immunization exemption out of convenience.

One legislator did mention that in rural communities, parents may feel that having to visit with a healthcare provider is inconvenient. This legislator also mentioned finances could be an issue, making immunization exemptions a bigger hurdle to overcome. Regarding future policy changes, this legislator stressed not to make changes that are one-size-fits-all because it does not work well in North Dakota. Specifically, any education needed for an immunization exemption could be provided by a healthcare provider or a public health nurse. This would be more appropriate for a state like North Dakota, with its rural characteristics and healthcare accessibility challenges.

Lastly, one legislator was quick to mention how a policy change may not have a large effect on immunization rates. "This doesn't solve our problem of school administrators ignoring the [school immunization] requirements."

State Government Employees:

Overall Thoughts:

Government employees shared varying ideas and opinions regarding ways to improve immunization rates in North Dakota. Specifically, they shared the challenges and barriers of enforcing immunization requirements in schools, ideas for improving school immunization rates, and ways to improve the enforcement of school immunization requirements.

State government employees did not believe declining immunization rates in the state were solely attributable to personal immunization attitudes and beliefs. Instead, employees recognized that school enforcement of immunization requirements access to immunizations, and barriers to immunization were contributing to the decline more than immunization attitudes and beliefs. They also recognized the challenges in collecting immunization records from North Dakota's out-of-state, transient population, which is a major factor in declining immunization rates in the western part of North Dakota due to the recent oil boom.

One state employee said, "It's not that people are against immunizations. In North Dakota, our completion rate for the first dose of the MMR immunization for children between 12 and 15 months, according to the NDIIS, is 96%. It's not that people don't want the vaccine. It's that they're not going in or they're not presenting their record to the schools."

One state employee also believed most schools do not understand what could happen in the event of an outbreak. This employee believed more emphasis on educating school administrators on the diseases immunizations are meant to prevent, how quickly a disease could spread throughout a school, and the impacts an outbreak would have on learning and attendance was needed. This person also shared that superintendents would appreciate more information regarding which immunizations are required and recommended so school secretaries are better-informed and more able to complete the annual school survey.

School Enforcement

State employees were asked about the role that schools, the NDDPI, and the NDDoH play in the enforcement of immunization requirements. Varying opinions were shared regarding what the schools' role should be in enforcement and how immunization requirements are enforced at the state-level.

One state employee commented on how much of an issue school enforcement of immunization requirements has become. "We always say that immunizations should just be a natural part of what everybody does, and the work that both the [NDDoH] and the [NDDPI] do on that should really just be a pebble and a stone, but instead it's like a boulder. It's a boulder that gets in the way. And we spend more time on it than we should. [Immunizations] should just be a no-brainer."

Another employee stated how immunization enforcement is not common in North Dakota. "It's become a cultural thing of us not enforcing [immunization requirements]. I believe if it was enforced one year, parents would know, 'That's the way it is.' and they would get their kids in [to the clinics to be immunized]."

A different employee talked about why enforcement may not be a common practice in North Dakota schools. "I think the reason we have so many reluctant superintendents is simply, 'We are North Dakota nice. We simply are.' And most often, the kids that aren't being immunized aren't those middle class or affluent kids from affluent families. So the kids that are going to be jeopardized [by enforcement] are the kids that are in most need of our hot breakfast program or our hot lunch program. And it's hard for our educators, who are nurturers, to say for one or three

days that that child can't come into our schools those days for breakfast, for love, for instruction, for education, for lunch.”

There were varying opinions within the NDDPI as to whether or not enforcement of immunization requirements was the responsibility of the department, whether this department should be leading efforts towards stronger school enforcement, and whether or not funding should be withheld from non-enforcing schools. The enforcement of immunization requirements has been supported by the NDDPI in statewide communications to school administrators, but so far, no punitive actions have been taken by the NDDPI towards schools for not enforcing the requirements.

Participants were also asked how schools across the state would react to stronger enforcement, specifically inquiring as to whether they thought many children would be missing school and the number of days children would be out of school. One participant said, “The only way we are going to find out the answer of that question is to do it. I suspect you are going to see a variance in responses from across the state. Do you see schools ready to take that firm line? I don't know what's going to happen in the small towns. I don't know. But, we probably won't know what happens until we do it and right now we are speculating.”

When asked about the current immunization exemption policy in North Dakota, an employee mentioned how easy the current process was in North Dakota. “I think the ease of claiming an exemption is a problem. It's easier to get an exemption than it is to get [immunized]. You just sign a piece of paper.”

State employees were also asked if they believed schools were the appropriate place to enforce immunization requirements. An employee said, “One thing I've heard is, ‘This should not be the schools' responsibility.’ They struggle with this in every state across the country. It is enforced by the school systems and that's because the schools systems are the touch point for all of these kids; they congregate together, and you have a situation where kids can spread disease easily. Practically, who else could enforce it?”

A different employee questioned why schools are in charge of enforcing immunization requirements instead of a healthcare provider? “Why is more of a responsibility of a school superintendent? Why is it more suitable to have the authority lie there on a health issue than it would be to have a physician responsible?”

An employee responded, “If the enforcement is on a physician, the problem is you are not going to have every child go to a physician or a healthcare provider necessarily at the time when they need to be immunized. I think the reason this became an issue where the schools are enforcing it across the country is because schools are a places where all children go. Even if they don't see a physician or healthcare provider, the school is the touchpoint between the government and the child.”

Another state employee believed the state of North Dakota has not given schools enough resources to effectively enforce immunization requirements. “In North Dakota, the responsibility [of enforcement] is given to the schools. One caveat of this is that North Dakota is not fortunate

enough to have nurses in all of our schools. I understand what the law says, and I understand the interpretation of that law. It seems we are asking the schools to do things that are difficult without that school nurse infrastructure. I think we have to have a way to require those immunizations to be up-to-date in schools. I'm not sure we have provided, as a state, the appropriate mechanisms to make that happen in a reasonable way for the schools."

Another employee referred to the N.D.C.C. and the inability of the NDDPI to currently require schools to enforce immunization requirements. "The law says schools are the enforcers. If schools don't comply with the law, the NDDPI can impose sanctions on them. What [sanctions] might or might not be is at the state superintendent's discretion. I don't see a situation where the NDDPI has any resources to do local level enforcement. There's no agency or full-time employees that could play that enforcement role."

A different state employee responded, "N.D.C.C. says [NDDPI] is required to enforce or regulate, and we rely on our local superintendents [to enforce]. That's as far as [NDDPI] goes." This person also added, "[It's not about] who's responsible or who should be responsible. I think the schools are more than willing to, for the most part, or at least the NDDPI understands their role and responsibility in this. We want to make sure we share [best practice] information with school districts. That will be where our solutions lie and what we are committed to."

This employee also stated, "Schools are the gateway between government and children. More and more and more has been placed on the schools to be the enforcer. [Schools] have all of these responsibilities and we are the enforcers for everything. We don't like to be the enforcer either. I think we should focus on, 'How can we get the resources and the partnerships [for immunizations] to a better place in North Dakota?'"

School Funding and Immunization Enforcement

Many schools around the state have shared concerns with the NDDPI about enforcing immunization requirements because the loss of students due to exclusion has the potential to affect school attendance which affects school funding, and the NDDPI representatives shared school sentiments during the focus group. One state employee said, "If schools do exclude a child for immunization reasons, I would hope that it wouldn't affect the schools' financials."

Remove Barriers, Increase Access

Many state employees focused on how to remove barriers to immunization throughout the state, including increasing access to immunizations to get more children immunized.

One suggestion to increase access was to engage and/or incentivize local public health units to conduct school immunization clinics and administer immunizations to children who are noncompliant with state immunization requirements. State employees noted how this practice has been historically successful, and how it would remove barriers for parents of children who are not immunized. One state employee shared an example of a school district and local public health unit having an agreement to provide immunizations to children who are not compliant with immunization requirements as a best practice that could be modeled throughout the state.

Other state employees mentioned that local public health units can bill for vaccines and their administration, although some units are resistant to billing for these services and will not do it unless pushed.

State employees also recognized there may not be adequate resources in the state to conduct immunization clinics in each school. One state employee suggested changing state policy to allow paramedics and pharmacists to administer vaccinations to children to help fill the human resource gap. This person also said a pilot program may be needed to see how using paramedics and pharmacists to assist in school immunization clinics and the administration of vaccines would work.

Lastly, state employees acknowledged the schools' challenges in getting immunization records from out-of-state students.

Policy Recommendations

One state employee recommended shifting the penalties for noncompliant students off of the schools and onto the parents of noncompliant students through state taxes. The group did not believe this was possible or logical. The same employee suggested having incentives for schools with total immunization compliance. This suggested incentive for schools was either grant money for school playgrounds or laptops or possible recognition as a healthy school in North Dakota.

One state employee was in favor of changing state policy to allow paramedics and pharmacists to administer school-required vaccinations to children under eleven years old, believing this change could help with the human resources needed to conduct school immunization clinics.

When asked about making the exemption form harder to obtain, such as removing the form offline, state employees were not supportive, saying that this practice would not be transparent and it would be unethical.

Lastly, when discussing policy changes and ways to motivate local public health units to assist with school immunization clinics, one state employee recommended engaging the North Dakota Association of Counties or another similar, influential, socially minded organization to help support the change.

Changing Policy

State employees were very hesitant to change North Dakota's immunization policies, stating, "We don't like opening up that law because you don't know what could happen to it. In other states, they [have not been] as successful as California." Another added, "People will try to get into the vaccination system. By opening that [law] up, you never know where that is going to go. We still have ACIP recommendations [in our state policy, and we would like to keep these recommendations]."

Another employee said, “If schools aren’t going to enforce this, are they going to make parents go in [to the doctor] and sign the form? [If they aren’t], that needs to get corrected. Our [bad] rates are mostly [not because of] exemptions. It’s the other part, [the percent who are unaccounted for]. If 97% of kids were vaccinated, I would take that and be proud of it. Unless we can get enforcement figured out, I don’t know if it’s worth changing [the law].”

Chiropractor Survey

The chiropractic survey received 15 responses. Preliminary results show a broad range of opinions on immunization practice and policy, but the number of responses at this time is too low to have any statistical significance.

Discussion

Focus Groups

The focus group discussions revealed that most parents around the state are immunizing their children. While a significant number of children are entering school only partially immunized, only a very small population does not vaccinate their children at all. It appears that most children who are only partially immunized are so because parents are unaware of immunization requirements or it is inconvenient to get immunizations.

This finding was reassuring, as it suggests that many parents in the state are supportive of vaccinating their children and only a small proportion are not vaccinating their children at all. It also helps to identify areas of improvement, such as parental education or notice when immunizations are due, such as before kindergarten and seventh grade entry.

School’s Role in Enforcement of Immunization Requirements

In the United States, high vaccination coverage has been achieved for almost two centuries by making immunizations a requirement for admission to school. The enforcement of immunization requirements is a responsibility given to schools across the United States because schools are a point of contact for the majority of children. Schools also have a large potential for the spread of diseases among children closely quartered for long periods of time, and in the event of a disease outbreak, learning could be disrupted for long periods of time.

While many school administrators expressed frustration with schools being the enforcement arm for immunization requirements, all agreed immunizations were important and many understood why schools have been given this task. Schools are the touchpoint for nearly all children in North Dakota, with over 97% of them attending public or private schools in the state. No other entity can reasonably enforce immunization requirements while also holding parents accountable.

Schools enforcing immunization requirements for the first time mentioned the laborious tasks that occurred to get every child in compliance, with some school districts having hundreds of

students that were noncompliant. Since so many students were brought into compliance during the 2015-2016 school year, it has been anticipated that there will be fewer students noncompliant next year in these schools. With processes already in place and one year of experience to rely on, the process of ensuring immunization compliance among all students will be easier for these schools next year and in years to come.

Some schools shared that they give the immunization exemption form to parents to sign and become compliant with immunization requirements, and it was noted that some parents did sign the form out of convenience. This shows that not all parents claiming exemptions are truly against immunizations, which was also found by Omer et al.

Another barrier for school enforcement is the lack of resources for schools to achieve immunization compliance. Most schools in the state do not have a school nurse, and school secretaries are often tasked with reading and interpreting immunization records and completing the school immunization survey. Local public health units can help fill this role in schools without school nurses, but agreements between the schools and the local public health units need to be reached and services need to be agreed upon.

School Enforcement of Immunization Requirements

It is not a surprise that state and school leadership influence school enforcement policies and enforcement policies impact immunization rates. State leadership and school administration play a very important role in the enforcement of immunization requirements; state leadership sets expectations for school enforcement and school administration are tasked with the execution of enforcement at the local level. Throughout the state, it was observed how inconsistent guidance and direction from state leadership regarding immunization enforcement led to varying school enforcement practices and this ultimately impacted the immunization rates of schools.

In schools where superintendents believed that full childhood immunization compliance was important, immunization rates were significantly higher. Conversely, in schools where leadership expressed that immunization compliance was not of high importance, lower immunization rates were observed.

Many school administrators in schools not enforcing immunization requirements expressed that they were concerned about the number of children that would be excluded from school and the amount of time they would out of school if immunization requirements were strictly enforced. Historical examples from two large school districts that regularly enforce immunization requirements and the two districts that began enforcing this year strongly suggest that significant absenteeism is unlikely to occur and it is essentially a nonissue for enforcing schools. Nearly all enforcing schools reported that most students are back in school within a few days of exclusion.

It was important to determine if immunization rates were different in schools that enforced immunization requirements and those that did not at the beginning of the 2015-2016 school year. During focus groups, schools that annually enforce immunization requirements shared that they make an effort to collect immunization records and exclude children on a deadline. Strict

enforcement policies encourage parents to complete missing immunization records or turn records in to their child's school, resulting in high immunization rates.

In contrast, schools that were not enforcing immunization requirements at the beginning of the 2015-2016 school year had many children with missing records or that weren't up-to-date on all required immunizations. With no motivation to complete immunizations and turn in immunization records, lower immunizations rates in these schools were observed.

Higher immunization exemption rates were not seen in schools enforcing immunization requirements, suggesting that even though the process for obtaining an immunization exemption in North Dakota is relatively easy, most parents in school districts enforcing immunization requirements are not taking advantage of North Dakota's convenient exemption option and are actually immunizing their child according to school requirements.

This data highlights the importance of enforcing school immunization requirements at the beginning of the school year and the large role that it plays in assuring a vaccinated population in each school. The children attending schools that enforce immunization requirements had average immunization rates for each school-required vaccine at or above the Healthy People 2020 goal of 95% of kindergartners being vaccinated. Enforcing schools should be models for North Dakota and the country, achieving high immunization rates in varying communities with varying socioeconomics statuses, class sizes, and resources.

The results are of particular interest for many reasons. Immunization rates have declined in recent years in North Dakota, but data from this project shows that exemption seeking is not the main reason immunization rates were declining. For kindergartners, religious and personal belief exemptions account for a very small proportion of unimmunized or unaccounted for kindergartners.

Data from this project suggests that in North Dakota, Healthy People 2020 Goals could be reached statewide with existing laws and strict school enforcement of immunization requirements. Schools regularly enforcing immunization requirements and schools beginning to enforce immunization requirements during the 2015-2016 school year achieved Healthy People 2020 goals, and statewide enforcement has the potential to increase rates dramatically. While many school administrators shared that they do not believe enforcement of immunization requirements is in their scope of work, enforcement, when exercised, did have a dramatic impact on immunization rates. With a strong recommendation and mandate from the NDDPI regarding school enforcement of immunization requirements, school immunization rates in the state would probably increase significantly.

Policy Changes

Stakeholders universally agreed the process for obtaining immunization exemptions in the state of North Dakota is too easy and should be strengthened. Stakeholders also believed that if North Dakota has three types of immunization exemptions, it should be harder to get them; specifically, many stakeholders believed it should be harder to get an immunization exemption than it is to get vaccinated.

Many ideas were proposed for how to strengthen the current policy, and nearly all focus group participants believed education from a vaccine expert would strengthen the current policy. Healthcare providers and public health nurses were mentioned as professionals that could provide this information. It is important that healthcare providers, including physicians, physician's assistants, and nurse practitioners, along with public health nurses, be able to provide vaccine education to parents. In a rural state like North Dakota where access to healthcare can be limited, public health nurses will be another access point for those requiring education or choosing not to immunize.

Healthcare providers overwhelmingly supported policy changes, and agreed to provide the education to parents should a change occur. Public health nurses, while not as enthusiastic as the healthcare providers, agreed this task could fall within their roles and that they would be willing to provide the education, as well. This is contradictory to healthcare provider opinions previously noted in Arizona. Arizona healthcare providers were asked if they would support a change in immunization policy requiring them to sign off on exemptions. Only 37% of healthcare providers were supportive, believing it would not reduce the number of immunization exemptions, and it would burden their practices.³⁹

Making exemptions harder to obtain has helped improve immunization rates in some areas. In Washington State in 2009, legislators passed a law requiring the signature of a healthcare provider for parents wishing to opt out of school required immunizations. Eighteen months after the law took effect, exemption rates had decreased by 25%.⁴⁰ In Michigan in 2015, the state began requiring education for parents seeking an immunization exemption. In the first year of the law change, the results were incredibly promising with exemption rates decreasing by 39% statewide.⁴¹

Washington and Michigan's results reveal how making the process for obtaining an immunization exemption more difficult reduces exemption rates, specifically among two populations. The first population is parents who obtain immunization exemptions out of convenience because they struggle to find time to make immunization appointments or take time off of work. When this population is required to visit with a healthcare provider or public health nurse, they will be more likely to receive the immunizations because their child is usually already partially immunized.

The second group that is affected is those who are hesitant to vaccinate. When hesitant parents visit with a vaccine expert and receive education, they may be more likely to immunize their children. In previous studies, parents have stated that healthcare providers are the most important source of information when making decisions about vaccination, and this change in North Dakota's immunization policy may help sway parents who are hesitant and currently filing immunization exemptions to begin vaccinating their children.²⁴

When stakeholders were asked about other potential policy changes, responses were mixed.

Healthcare providers were the only group that strongly supported publishing immunization rates by school. Other groups were not sure if publishing rates would make an impact, while school officials did not believe it would improve immunization rates. Stakeholders were also mixed on whether or not requiring exemptions to be renewed yearly would increase immunization rates and decrease exemption rates.

Although North Dakota may achieve immunization goals through stricter school enforcement as previously mentioned, it should be noted that the rate of parents seeking exemptions in North Dakota has been steadily increasing and could potentially impact immunization rates, even in enforcing schools. A policy change requiring education for parents seeking an exemption would provide a more consistent policy that does not incentivize nonimmunization due to convenience and could not be used by schools as a way to achieve full compliance. This change should be strongly considered by lawmakers.

Policy and Practice Changes Must Work Together

If all schools in North Dakota begin enforcing immunization requirements and excluding noncompliant child and the exemption process is kept the same, it is expected that immunization rates will increase. The change in the rates of exemptions filed in the state will need to be closely monitored. While there is a chance that parents and school administrators may opt for the easy way out and use the exemption form to achieve compliance, significant increases in exemption rates were not seen in the two schools that began enforcing immunization requirements in 2015, providing a small glimpse into what could happen if all schools decide to enforce.

Other Topics

Immunization rates in the state vary drastically by county and from east to west. In the western part of the state where a recent oil boom has occurred, the collection of immunization records from transient populations and new students has been a large, overwhelming barrier for schools when determining immunization rates. As such, counties with low immunization rates appear to cluster in the western part of the state.

The collection of out-of-state immunization records was a challenge mentioned in nearly every focus group, especially in the western part of the state. The difficulty in obtaining a record is a barrier for many parents, and is sometimes enough of a barrier for parents that they will complete an immunization exemption form. States must work together to share immunization records more easily to help parents. Presumably, North Dakota is not the only state dealing with this issue, and a national immunization registry was mentioned many times as a solution. While there are many barriers to the creation and implementation of this registry, it would ultimately benefit the users and is worth pursuing. If a national registry is not realistic, states should work on data sharing agreements between individual states.

Conclusions

State immunization requirements are important for achieving and maintaining high vaccination coverage rates and low rates of vaccine-preventable diseases. When evaluating immunization policy and practice in the state of North Dakota, it is clear that the rapidly changing demographics of the state along with a lack of enforcement of immunization requirements has led to a decline in immunization rates. In addition, the current immunization exemption policy makes it easy for parents to claim exemptions, and it is often being misused by parents seeking exemptions out of convenience.

North Dakota could improve its immunization rates by changing its exemption policy and by requiring strict enforcement of immunization requirements. Both of these changes will increase immunization rates, with the biggest gain coming from strict enforcement in local schools.

Previous studies have shown how immunization policy impacts immunization and exemption rates and incidence of vaccine-preventable diseases, while few have discussed the impact of school enforcement on immunization rates. Further research is needed to understand how to standardize and improve school enforcement of immunization requirements in North Dakota. Further research is also needed to determine how the following impact school-level enforcement, immunization rates, and exemption rates: the enforcement philosophies of statewide leadership and school administrators, school immunization clinics, and the availability of school nurses.

Recommendations to Improve Immunization Rates in North Dakota

To improve immunization rates in North Dakota, the CIRE recommends the following changes, which are organized by policy, rule, and practice/process. Policy changes need legislative approval; rule changes need approval from the state health council; and practice/process changes are activities needed to increase immunization rates.

Policy Changes

The CIRE will offer recommendations for policy changes, which do not include eliminating religious or personal belief exemptions. While stakeholders believed a change in state policy was necessary, the NDDoH should determine the effectiveness of school immunization enforcement before legislative changes are enacted.

North Dakota should require parents and guardians to obtain the signature of a healthcare provider (physician, nurse practitioner, or physician's assistant) or public health nurse to receive a nonmedical exemption to school immunization requirements. The signature would be obtained after healthcare providers or public health nurses provide education to parents and guardians about the benefits and risks of vaccination. The nonmedical exemption form should be available online and once signed by the appropriate provider and the parent or guardian, be turned into a child's school. This process will eliminate parents filing an exemption in North Dakota out of

convenience.

North Dakota Century Code language should be changed; moral and philosophic exemptions should be combined into one exemption and jointly called personal belief exemptions.

Rule Changes

In the North Dakota Administrative Rules, almost all vaccines required for kindergarten are required for subsequent grades if a child missed the kindergarten requirement. When the tetanus, diphtheria, and acellular pertussis (Tdap) booster and meningococcal conjugate (MCV4) vaccines were added as requirements for seventh grade entry in 2008, the law stated it was only required for seventh grade entry and not for subsequent school years. To ensure consistency, the policy should be changed in the Administrative Rules to reflect that these immunizations are required for seventh grade entry and all subsequent school years, if missed at seventh grade.

Practice/Process Changes

The NDDPI, working closely with the NDDoH, should mandate the enforcement of school immunization requirements. This should include a consistent, strong message supporting school enforcement of immunization requirements from the head of the NDDPI and the NDDoH. This message will advocate for the importance of vaccines and the need for schools to be compliant with immunization requirements by a specific date. An expectation should be set by the NDDPI that school superintendents and principals must follow N.D.C.C. and have high vaccination and compliance rates. Support for this initiative is needed from the North Dakota Governor's Office, the NDDPI, the NDDoH, the Attorney General's Office, and more.

If the policy change requiring the signature of a healthcare provider or public health nurse on the nonmedical exemption form is not deemed to be feasible or advisable, the NDDoH should limit access to the immunization exemption form. The immunization exemption form should be available at the NDDoH by request only. The form should not be readily available at schools or on the internet. This recommendation would require the NDDoH to create an electronic form for parents to fill out online for each child for whom they are requesting an immunization exemption. The NDDoH would process each request, and exemption forms would be mailed to the parent or guardian. Exemption forms should have some quality of authentication to protect against duplication, such as an embossed seal. With this option, schools would not be able to hand out the exemption form. Exemptions should be renewed yearly in this proposed change.

If schools are unwilling to enforce immunization requirements, foundation aid should be withheld from schools until all children are compliant with state immunization requirements.

The NDDoH should create a new immunization exemption form. The new form should be separated from the Certificate of Immunization. Moral and philosophical exemptions should be combined into one exemption option on the form. The new form will clarify which vaccines a child is exempt from, which kind of exemption is being requested for each vaccine, and will have

a checklist of items that parents must initial, including acknowledging the risks of not vaccinating and signing the exemption form. The new exemption form be filled out for all exemptions: medical, religious, and personal belief.

The NDDPI and NDDoH should modify the state immunization manual. It should include sample documents, current requirements, best practices, and frequently asked questions. This should be distributed and/or promoted among schools and local public health units. It should include interpretations of the N.D.C.C. for schools to follow and abide by, including guidance on the 30-day grace period and defining the roles of the institutional authority. It should include best practices from schools already enforcing immunization requirements in the state.

The NDDoH should provide more guidance to schools on how to manage immunization compliance and exclusion for homeschooled children in local school systems and how homeschooled children should be accounted for in the school immunization survey. Homeschool data should be provided separately in the school immunization survey.

The NDDPI should incorporate immunization training sessions, round tables, question and answer sessions, and other educational activities for school administrators to take part in and learn about how to best incorporate immunization policies into their school. This will be very beneficial, specifically for new administrators. Trainings could include a panel with representatives from the Attorney General's Office, the NDDPI, the NDDoH, the CIRE, and from school districts currently enforcing immunization requirements. Key messages in these sessions should be: 1) vaccine necessity, 2) 100% compliance, 3) enforcement, 4) financial and legal consequences of noncompliance, and 5) the expectation that exemption forms not be handed out. (The fifth recommendation could be omitted if the process of obtaining the exemption form is changed.)

Properly aligned incentives are imperative for successful enforcement of immunization requirements. The NDDPI and school administrators should review the processes for determining average daily membership and the distribution of foundation aid, as these processes should be aligned with immunization policies. Schools should not be penalized financially when children miss school because of noncompliance with immunization requirements, which negatively impacts average daily attendance. Instead, foundation aid should be withheld for noncompliant students attending school past the exclusion deadline. The NDDPI, with assistance from the NDDoH, should randomly validate school enforcement policies and practices in schools each year.

The NDDPI and NDDoH should encourage all schools to track immunization status and compliance through the use of an electronic system.

The NDDPI and NDDoH should better market the resources they have available to schools regarding immunization policy and practice. This includes a template letter for schools to send to parents of noncompliant children, school immunization survey guidance, and other resources as

requested by schools, the NDDoH, and the NDDPI.

The NDDoH should develop and target educational strategies for schools with high immunization exemption rates, particularly private schools.

All schools should follow the 30-day grace period outlined in the N.D.C.C., and should exclude noncompliant students 30 days after the start of the school year or 30 days after enrolling in a school system. This consistent exclusion deadline will help standardize enforcement practices in the state. Alternatively, if schools do not follow the 30-day grace period outlined in the N.D.C.C., schools should exclude noncompliant students by November 1st of each year. This deadline will help ensure immunization compliance and accuracy in the school immunization survey, which is typically due in mid-November.

All schools should work closely with local public health units to improve immunization rates and compliance with state immunization requirements. This will reduce barriers such as transportation and convenience.

Local public health units, particularly in rural communities, should create a memorandum of understanding with local schools so they can assist the schools with immunization record collection, determining immunization compliance, and completing the school immunization survey accurately. Local public health units should also assist the school in sending letters to families of children noncompliant with immunization requirements.

In many communities, local public health units also attend school registration and kindergarten round-up events to provide immunization records, interpret immunization records and answer parent questions on site. Local public health units could also schedule immunization appointments during registration events for children noncompliant with school requirements or administer immunizations at that time.

Schools receiving out-of-state records should implement a process where these records are passed on to local public health units after school verification so the records can be entered into the NDIIS. This will allow more accurate, real-time tracking of immunization rates, help with future data collection, and be a resource for parents and children should they move to another state and need immunization records in the future.

School immunization clinics are an important part of achieving high immunization rates across the state. They remove barriers for parents and help noncompliant children receive missing immunizations. In the state of North Dakota, many rural public health units are working with schools to give catch-up immunizations in schools to children not fully compliant with state requirements. All local public health units should work with schools in their counties and districts to provide immunization clinics for school-required immunizations, seasonal influenza vaccinations, and other recommended vaccines, such as the human papillomavirus vaccine.

Schools should work with local public health units to schedule school immunization clinics. Schools should designate time and space for clinics to occur, and children should be excused from class to receive immunizations. Parental consent forms should be sent home to parents before immunization clinics to be filled out and returned to the school by an acceptable deadline.

For children that are in the process of receiving all school-required immunizations, schools should follow-up with those children every 30 days to reassess immunization compliance. This 30-day grace period should also be used to follow-up with students entering a school during the school year. The 30-day period should only be allowed and started in the following circumstances: 1) after the start of the school year, 2) after a child enters the school system, or 3) when a child is in the process of receiving a series of immunizations and the child becomes eligible to receive the next immunization in the series.

When the 30-day grace period is complete and the exclusion deadline occurs, schools should only allow children to attend school if progress has been made towards completing school required immunizations, including 1) receiving immunizations, or 2) an immunization appointment has been made. Exclusion should only occur for children who have not made any progress towards becoming compliant with state immunization requirements.

The NDDoH should continue to work with other states on data sharing agreements to easily access immunization records of children from out-of-state. In addition, a national immunization registry should be explored in depth.

Local immunization stakeholders should meet yearly to discuss best practices, immunization clinics, potential collaborations, and concerns. This should include healthcare providers, public health nurses, and school administrators and staff. The NDDoH and NDDPI should encourage participation and assist when needed.

Lastly, to help increase immunization understanding and compliance in the New American community, the NDDoH should work closely with New Americans, translators and local public health units to develop culturally competent, basic immunization materials in the languages spoken by New Americans. Materials could be provided to parents and other members of New American communities, and this would greatly benefit schools and New Americans and help them achieve immunization compliance. The NDDoH should work closely with Lutheran Social Services and healthcare centers serving the New American populations to develop practices that will help New Americans achieve immunization compliance.

Best Practices

The following are best practices that were found during focus groups and one-on-one interviews. The NDDoH should provide guidance on best practices to schools and clinics. Other best practices, once identified, should be compiled into an immunization toolkit or manual and given

to North Dakota schools.

School Immunization Clinics and Working with Local Public Health Units

In 2014, First District Health Unit in north central North Dakota contacted Burlington Public Schools about a Quality Improvement Pilot Project for North Dakota's Required School Immunizations. This project included public health staff assessing immunization records in the spring of 2014 and giving immunizations to sixth, seventh, and eighth graders who were not compliant with N.D.C.C. or who needed immunizations for the fall of 2014. In the fall of 2014, public health staff assessed and updated records, assisted parents in acquiring immunization records, administered immunizations required for school entry, and also administered recommended immunizations.

The school and local public health unit worked together to review all sixth, seventh, and eighth grade students' immunization records. For the students missing required immunizations, a letter, consent form, and vaccine information sheets were sent home to parents. The letter informed parents about which immunizations their child was missing, and instructed them to indicate which vaccines they wanted their child to receive in a school immunization clinic. Students in seventh and eighth grade that were missing immunizations were brought up-to-date, and 6th graders were brought into immunization compliance for the following school year.

In the fall of 2014, public health staff attended registration events and held school immunization clinics on those days. Public health staff were available to give immunizations, look up immunization records, and answer questions.

At the beginning of the 2014-2015 school year, Burlington Elementary School had 100% immunization compliance among their student body. School clinics improved immunization rates and the relationship between the local public health unit and the school. Parents and school staff found the clinics to be convenient and save time. (M. Fettig. Written and oral communication, March 2016)

The CIRE also learned of some collaborations and agreements between local public health units and schools.

In some agreements, public health staff are assigned a position in the school so they can come into the schools and have access to immunization records to help determine immunization compliance. The NDDoH worked with the North Dakota Attorney General's Office to draft a memorandum on how the agreement can be structured, and this is available to groups who desire a reference.

In other settings, North Dakota schools and their local public health units have verbal agreements where public health nurses come in to schools multiple times a year for school immunization clinics. Public health nurses review students' records, help determine who needs immunizations, and assist the schools in sending letters, immunization forms, and insurance forms to parents of noncompliant children. The forms are returned to the school, space is designated for school

immunization clinics, and this positive working relationship has helped increase immunization compliance in participating schools.

Limitations of This Project

There are limitations to this work. For focus groups, the majority of stakeholders resided in or near the larger, more urban cities according to North Dakota standards. Although there was some participation from rural stakeholders in focus groups and in interviews, much of the results in this paper are from participants in urban areas of North Dakota. Additionally, nearly all enforcement data used was from larger school districts. Because North Dakota is a very rural state, future research could be more inclusive of rural stakeholders and data to gain a broader perspective.

Because of time, resources, and other factors, this project did not have participation from a representative sample of immunization stakeholders in North Dakota. In total, the CIRE only met with 189 immunization stakeholders in the state, and their views may not be representative of all stakeholders in each category, particularly parents. Parents were recruited through parent teacher organizations and university staff listserv emails. This is likely to introduce some skewing away from less educated parents or parents of lower socioeconomic status. Because the focus groups were primarily a qualitative study of attitudes and practices based on a convenience sample, readers should not assume that any expressed opinions represent statistically significant results from a definitive representative sample of stakeholders across the entire state.

There is potential for bias in the study populations, specifically selection bias. Focus groups relied mostly on volunteer stakeholders for participation, resulting in self-selection for people with strong opinions on either side of an issue. Additionally, stakeholders were surveyed in a group setting, likely causing more neutral participants to respond in a more extreme way given the environment.

Focus groups were not conducted with chiropractors and legislators, although some legislators were interviewed. With legislators being spread throughout the state, and without a current legislative session in progress, the CIRE did not feel that a focus group of legislators would be feasible. Because chiropractors work varying schedules with very few in large practices, the logistics of bringing chiropractors together for a focus group was also impractical. After visiting with the NDCA about the immunization survey, the CIRE offered to conduct a focus group of chiropractors; the CIRE received no response.

Nearly all of the data used in this project was aggregate data, especially when considering school immunization rates. Individual data was not available at the two time points where enforcement was compared, therefore, a change in vaccination rates could represent 1) a change in behavior of the same set of students, 2) a change in the individuals that entered and left a school, or 3) a combination of both. Most students will be the same at both time points, but data was analyzed by treating the samples as independent, as this is the more conservative option. Thus, all statistically significant results would carry the same interpretation had students been analyzed under the other assumption using the same student at both time points.

Lastly, the CIRE's goal is to improve immunization rates in the upper Midwest. Although the goal was to provide neutral facilitation of all focus groups, the CIRE should not be viewed as an uninterested and independent third party facilitator.

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About the Center for Immunization Research and Education:

The CIRE was founded in 2015 at North Dakota State University within the Department of Public Health.

The mission and purpose of the CIRE is to address concerning trends in vaccine coverage through education and research, improve regional rates of vaccine acceptance and uptake, and thereby decrease the risk for vaccine-preventable diseases in the upper Midwest.

CHAPTER 23-07 REPORTABLE DISEASES

23-07-01. State department of health - Collection of public health information.

The state department of health shall designate the diseases or conditions that must be reported. Such diseases or conditions may include contagious, infectious, sexually transmitted, or chronic diseases or any illness or injury which may have a significant impact on public health. The state department of health shall maintain a uniform statewide population-based registry system for the collection of data pertaining to the incidence, prevalence, risk factors, management, survival, mortality, and geographic distribution of cancer and reportable benign tumors.

23-07-01.1. Reporting of physical or mental disorders.

The state department of health shall define disorders characterized by lapses of consciousness, gross physical or mental impairments for the purposes of the reports hereinafter referred to:

1. A physician or other health care provider may report immediately to the department of transportation in writing, the name, date of birth, and address of every individual fourteen years of age or over coming before them for examination, attendance, care, or treatment if there is reasonable cause to believe that the individual due to physical or mental reason is incapable of safely operating a motor vehicle or diagnosed as a case of a disorder defined as characterized by lapses of consciousness, gross physical or mental impairments, and the report is necessary to prevent or lessen a serious and imminent threat to the health or safety of the individual or the public.
2. Such reports as required in this section are for the information of the director of the department of transportation in determining the eligibility of any person to operate a motor vehicle on the highways of this state and must be kept confidential and not divulged to any person or used as evidence in any trial, except that the reports may be admitted in proceedings under section 39-06-33.
3. The physician-patient privilege provided for by rules 501 and 503 of the North Dakota Rules of Evidence may not be asserted to exclude evidence regarding the mental or physical incapacity of a person to safely operate a motor vehicle in the reports as required under the provisions of this section.
4. Any physician or other medical professional who fails to make a report or who in good faith makes a report, gives an opinion or recommendation pursuant to this section, or participates in any proceeding founded upon this section is immune from any liability, civil or criminal, that might otherwise be incurred, as a result of such report, except for perjury.

23-07-01.2. Rules.

The department may adopt rules under chapter 28-32 for the efficient enforcement of this chapter.

23-07-02. Who to report reportable diseases.

Except as otherwise provided by section 23-07-02.1, the following persons or their designees shall report to the state department of health any reportable disease coming to their knowledge:

1. All health care providers, including physicians, physician assistants, nurse practitioners, nurses, dentists, medical examiners or coroners, pharmacists, emergency medical service providers, and local health officers.
2. The director, principal manager, or chief executive officer of:
 - a. Health care institutions, including hospitals, medical centers, clinics, long-term care facilities, assisted living facilities, or other institutional facilities;
 - b. Medical or diagnostic laboratories;
 - c. Blood bank collection or storage centers;

- d. Public and private elementary and secondary schools;
 - e. Public and private universities and colleges;
 - f. Health or correctional institutions operated or regulated by municipal, county or multicounty, state, or federal governments;
 - g. Funeral establishments and mortuaries; and
 - h. Child care facilities or camps.
3. The state veterinarian, if the disease may be transmitted directly or indirectly to or between humans and animals.
 4. A person having knowledge that a person or persons are suspected of having a reportable disease may notify the department and provide all information known to the person reporting concerning the reportable disease or condition of the person or persons.

If the person reporting is the attending physician or the physician's designee, the physician or the physician's designee shall report not less than twice a week, in the form and manner directed by the state department of health, the condition of the person afflicted and the state of the disease. A person making a report in good faith is immune from liability for any damages which may be caused by that act.

23-07-02.1. Reports of human immunodeficiency virus infection - Penalty.

Every attending physician treating an individual known by the physician to have a diagnosis of human immunodeficiency virus infection, acquired immune deficiency syndrome, or human immunodeficiency virus-related illness, including death from human immunodeficiency virus infection, shall make a report on that individual to the state department of health. A person treating an individual known to have human immunodeficiency virus infection in a hospital, a clinic, a sanitarium, the physical custody of the department of corrections and rehabilitation, a regional or local correctional facility or juvenile detention center, the North Dakota youth correctional center, or other private or public institution shall make a report on that individual to the facility administrator or the facility administrator's designee. Further disclosure of information on any individual known to have human immunodeficiency virus infection may only be provided to medical personnel providing direct care to the individual or as otherwise authorized by law. The designated official shall, if satisfied that the report is valid, make a report to the department on each individual having a diagnosis of human immunodeficiency virus infection, acquired immune deficiency syndrome, or human immunodeficiency virus-related illness, including death from human immunodeficiency virus infection, unless the diagnosed individual's attending physician has made such a report. The reports required under this section must contain the name, date of birth, sex, and address of the individual reported on and the name and address of the physician or designated official making the report. Failure by a facility to designate an official to whom reports must be made is an infraction. Any person who in good faith complies with this section is immune from civil and criminal liability for any action taken in compliance with this section.

23-07-02.2. Confidentiality of reports.

A report required by section 23-07-02.1 and held by the state department of health is confidential information. The information may not be disclosed, shared with any agency or institution, or made public, upon subpoena, search warrant, discovery proceedings, or otherwise, except that:

1. Disclosure may be made of medical or epidemiological information for statistical purposes in a manner such that no individual person can be identified;
2. Disclosure may be made of medical or epidemiological information to the extent necessary to enforce section 23-07-02.1 and this section and related rules concerning the treatment, control, and investigation of human immunodeficiency virus infection by public health officials; or
3. Disclosure may be made of medical or epidemiological information to medical personnel to the extent necessary to protect the health or life of any individual.

No officer or employee of the state department of health may be examined in any judicial, executive, legislative, or other proceeding regarding the existence or content of any individual's report retained by the department under section 23-07-02.1.

23-07-02.3. Emergency reporting.

1. The state health officer may issue a temporary order for emergency reporting of disease conditions or information if the state health officer finds probable cause to believe there is a threat caused by an imminent or emerging condition affecting the public health, including actual or threatened terrorism.
2. The state health officer may designate who must report, what conditions or information must be reported, what information must be contained in the report, the methods and frequency of reporting, and may make any other pertinent requirement.
3. The temporary order may be issued and is effective without regard to chapter 28-32 for a period of ninety days, unless earlier revoked by the state health officer. Emergency rulemaking must be initiated under chapter 28-32 within ninety days of the order or the order expires. The temporary order and any emergency rulemaking under this section are effective without the necessity of approval from the health council.

23-07-03. Report of cases of sexually transmitted disease.

The superintendent of a hospital, dispensary, or charitable or penal institution, in which there is a case of sexually transmitted disease, or the superintendent's designee, shall report such case to the nearest health officer having jurisdiction. The report must be made in the form and manner directed by the state department of health.

23-07-04. Report of reportable disease by township board of health.

Repealed by S.L. 1999, ch. 242, § 7.

23-07-05. Local health officers to report reportable disease to state department of health.

At such time as may be required by the state department of health, each local health officer shall submit to such department, on blanks furnished by the department for that purpose, a summarized report of the reportable diseases reported to the health officer during the week. When no cases have been reported during the week, the report must be made with the notation "No cases reported".

23-07-06. Contagious or infectious diseases - Power of local board of health to quarantine.

Whenever a local board of health knows that a case of a contagious or infectious disease exists within its jurisdiction, the board immediately shall examine the facts of the case and may adopt such quarantine and sanitary measures as in its judgment tend to prevent the spread of such disease. The board immediately may cause any person infected with such disease to be removed to a separate house if, in the opinion of the health officer, such person can be removed without danger to that person's health. If the infected person cannot be removed without danger to that person's health, the local board shall make such quarantine regulations as it deems proper with reference to the house within which such infected person is, and may cause the persons in the neighborhood to be removed, and may take such other measures as it deems necessary for the safety of the inhabitants within its jurisdiction. Quarantine measures adopted under this section must be in compliance with chapter 23-07.6.

23-07-07. Sexually transmitted diseases - Additional powers and duties of health officers.

The state health officer, and each district, county, and city health officer within the officer's jurisdiction, when necessary for the protection of public health, shall:

1. Make examination of any person reasonably suspected of being infected with a sexually transmitted disease and detain that person until the results of the examination are known.
2. Require any person infected with a sexually transmitted disease to report for treatment to a reputable physician and to continue such treatment until cured or, if incurable, continue indefinitely such treatment as recommended by the physician.
3. Investigate sources of infection of sexually transmitted diseases.
4. Cooperate with the proper officials whose duty it is to enforce laws directed against prostitution, and otherwise to use every proper means for the repression of prostitution, including providing proper officials with all relevant information available concerning individuals who are infected with the human immunodeficiency virus and who are engaged in prostitution.

23-07-07.1. Blood sample of pregnant woman must be submitted for serological test for syphilis.

Repealed by S.L. 1991, ch. 263, § 1.

23-07-07.2. Definitions.

Repealed by S.L. 1991, ch. 263, § 1.

23-07-07.3. Certificates reporting births and stillbirths to state whether blood test made.

Repealed by S.L. 1991, ch. 263, § 1.

23-07-07.4. Penalty.

Repealed by S.L. 1991, ch. 263, § 1.

23-07-07.5. Testing of inmates and convicted individuals for exposure to the human immunodeficiency virus - Reporting - Liability.

1. The following individuals must be examined or tested for the presence of antibodies to or antigens of the human immunodeficiency virus:
 - a. Every individual convicted of a crime who is imprisoned for fifteen days or more in a grade one or grade two jail, a regional correctional facility, or the state penitentiary;
 - b. Every individual, whether imprisoned or not, who is convicted of a sexual offense under chapter 12.1-20, except for those convicted of violating sections 12.1-20-12.1 and 12.1-20-13; and
 - c. Every individual, whether imprisoned or not, who is convicted of an offense involving the use of a controlled substance, as defined in chapter 19-03.1, and the offense involved the use of paraphernalia, including any type of syringe or hypodermic needle, that creates an epidemiologically demonstrated risk of transmission of the human immunodeficiency virus.
2. The results of any positive or reactive test must be reported to the state department of health in the manner prescribed by the department and to the individual tested. Subsection 1 does not require the testing of an individual before sentencing or the testing of an individual held in a jail or correctional facility awaiting transfer to the state penitentiary.
3. A licensed physician, nurse, technician, or employee of a hospital or clinic who draws blood from any person for the purpose of conducting a test required by this section is not liable in any civil action for damages arising out of such action except for an act or omission that constitutes gross negligence.

23-07-07.6. Report of testing result of imprisoned individuals.

Notwithstanding any other provision of law, the state department of health or any other agency shall release the results of any testing for any reportable disease performed on an

individual convicted of a crime who is imprisoned if the request is made by any individual and the individual provides written proof from the administrator of the facility with control over the individual imprisoned which states that the individual has had a significant exposure as defined in section 23-07.3-01.

23-07-08. Persons in prison examined and treated for sexually transmitted diseases.

Every person convicted of a crime who is imprisoned fifteen days or more in a state, county, or city prison must be examined for sexually transmitted disease and, if infected, must be treated therefor by the health officer within whose jurisdiction the person is imprisoned.

23-07-09. Sexually transmitted diseases - Persons isolated in prison - Exceptions.

The prison authorities of any state, county, or city prison shall make available to the health officers such portion of the prison as may be necessary for a clinic or hospital wherein the following persons may be isolated and treated:

1. Persons who are imprisoned in the prison and who are infected with a sexually transmitted disease.
2. Persons who are suffering with a sexually transmitted disease at the time of the expiration of their term of imprisonment.
3. Persons isolated or quarantined by the health officer when no other suitable place for isolation or quarantine is available.

In lieu of such isolation, any of such persons, in the discretion of the health officer, may be required to report for treatment to a licensed physician. This section may not be construed to interfere with the service of any sentence imposed by a court as punishment for the commission of crime.

23-07-10. Preventing infant blindness - Duty of physician or midwife.

All physicians, midwives, or other persons in professional attendance upon a birth always shall examine the eyes of the infant carefully. If there is the least reason to suspect the presence of a disease of the eyes, such person shall apply such prophylactic treatment as may be recognized as efficient in medical science.

23-07-11. Duty of parent to report to health officer.

If one or both eyes of an infant becomes inflamed, swollen, or reddened, or shows any unnatural discharge or secretion at any time within two weeks after birth, and if no legally qualified physician is in attendance upon the infant at that time, the parents of the child, or in their absence, whoever is caring for said infant, shall report the fact in writing, within six hours after discovery, to the health officer having jurisdiction. Such report need not be made from a recognized hospital.

23-07-12. Health officer to place reported infant in charge of physician.

Upon receipt of a report as provided for in section 23-07-11, the health officer shall direct the parents or whoever has charge of the infant suffering from inflammation, swelling, redness, or unnatural secretion or discharge of the eyes, to place it immediately in charge of a legally qualified physician.

23-07-13. Contagious or infectious diseases - Local board may establish temporary hospital.

Each local board of health may provide such temporary hospital or place of reception for persons afflicted with any contagious or infectious disease as it judges best for their accommodation and the safety of the inhabitants. It may provide a means of transportation to such hospital for persons suffering from any such disease. All such hospitals, and all private houses or other places in which exists any contagious or infectious disease, during the existence of such disease, are under the control and subject to the regulations of the local board of health.

23-07-14. Contagious or infectious diseases - Local board may destroy or disinfect infected clothing.

Any local board of health may cause to be destroyed any bed, bedding, clothing, carpets, or other articles which have been exposed to infection from a contagious or infectious disease and may allow reasonable compensation for the same. The board also may provide a proper place with all necessary apparatus and attendants for the disinfection of such articles and may cause all such articles to be conveyed to such place to be disinfected.

23-07-15. Removal of person afflicted with contagious or infectious disease - Removal of person who died of such disease - Prohibited.

No person, unless the person has a permit from the local board of health or state department of health, may remove or cause to be removed from without this state into this state, or from one building to another within this state, or from or to any railroad car or motor vehicle, any person afflicted with a contagious or infectious disease, or the body of any person who died of any such disease.

23-07-16. Child having contagious or infectious disease prohibited from attending school - Exception.

Except as provided by section 23-07-16.1, no principal, superintendent, or teacher of any school, and no parent or guardian of any minor child, may permit any child having any significant contagious or infectious disease, or any child residing in any house in which any such disease exists or has recently existed, to attend any public or private school until permitted to do so under the regulations of the local board of health.

23-07-16.1. School district to adopt policy relating to significant contagious diseases.

Each school district shall adopt a policy governing the disposition of children attending school within the school district, employees of the school district, or independent contractors under contract with the school district who are diagnosed as having a significant contagious disease. The state department of health shall, with advice from the superintendent of public instruction, adopt rules establishing guidelines for the policy. The guidelines may include methods and procedures relating to a determination of whether and under what conditions a child with a significant contagious disease may not continue attending school or whether and under what conditions an employee or an independent contractor with a significant contagious disease may not continue in a work assignment.

23-07-17. Vaccination or inoculation not required for admission to any school or for the exercise of a right.

Repealed by S.L. 1975, ch. 224, § 2.

23-07-17.1. Inoculation required before admission to school.

1. A child may not be admitted to any public, private, or parochial school, or day care center, child care facility, head start program, or nursery school operating in this state or be supervised through home-based instruction unless the child's parent or guardian presents to the institution authorities a certification from a licensed physician or authorized representative of the state department of health that the child has received age-appropriate immunization against diphtheria, pertussis, tetanus, measles, rubella (German measles), mumps, hepatitis B, haemophilus influenza type b (Hib), varicella (chickenpox), poliomyelitis, pneumococcal disease, meningococcal disease, rotovirus, and hepatitis A. In the case of a child receiving home-based instruction, the child's parent or legal guardian shall file the certification with the public school district in which the child resides.
2. A child may enter an institution upon submitting written proof from a licensed physician or authorized representative of the state department of health stating that the child has started receiving the required immunization or has a written consent by the child's parent or guardian for a local health service or department to administer the needed

- immunization without charge or has complied with the requirements for certificate of exemption as provided for in subsection 3.
3. Any minor child, through the child's parent or guardian, may submit to the institution authorities either a certificate from a licensed physician stating that the physical condition of the child is such that immunization would endanger the life or health of the child or a certificate signed by the child's parent or guardian whose religious, philosophical, or moral beliefs are opposed to such immunization. The minor child is then exempt from the provisions of this section.
 4. The enforcement of subsections 1, 2, and 3 is the responsibility of the designated institution authority.
 5. The immunizations required, and the procedure for their administration, as prescribed by the state department of health, must conform to recognized standard medical practices in the state. The state department of health shall administer the provisions of this section and shall promulgate rules and regulations in the manner prescribed by chapter 28-32 for the purpose of administering this section.
 6. When, in the opinion of the health officer, danger of an epidemic exists from any of the communicable diseases for which immunization is required under this section, the exemptions from immunization against such disease may not be recognized and children not immunized must be excluded from an institution listed in subsection 1 until, in the opinion of the health officer, the danger of the epidemic is over. The designated institution authority shall notify those parents or guardians taking legal exception to the immunization requirements that their children are excluded from school during an epidemic as determined by the state department of health.
 7. When, in the opinion of the health officer, extenuating circumstances make it difficult or impossible to comply with immunization requirements, the health officer may authorize children who are not immunized to be admitted to an institution listed in subsection 1 until the health officer determines that the extenuating circumstances no longer exist. Extenuating circumstances include a shortage of vaccine and other temporary circumstances.

23-07-18. Physician to report death from contagious or infectious disease to local board of health.

Each practicing physician in this state shall report to the local board of health within the jurisdiction of which the death occurred, in writing, the death of any of the physician's patients who has died of any contagious or infectious disease. The report must be made within twenty-four hours after such death and must state the specific name and character of the disease.

23-07-19. Appropriation made on report showing action necessary to prevent spread of tuberculosis.

If any society or association organized and existing for the purpose of controlling the spread of tuberculosis in this state considers it necessary to secure the services of a visiting nurse or nurses, or to disinfect any building, room, residence, hotel, or other place infected with tuberculosis, the society shall report such fact to the president of the county board of health and to the board of county commissioners. The report must recommend the course of action advisable to be adopted by the board of county commissioners in relation thereto and in accordance with the provisions of this chapter, and such board, at its next meeting, shall consider such report and recommendation and act on the same. The board may audit and allow bills for services rendered in carrying into effect any action taken by it under the provisions of this section.

23-07-20. Board of county commissioners may appropriate money to prevent the spread of tuberculosis.

The board of county commissioners of any county in this state may appropriate county money and levy taxes within the county levy limitations for the purpose of paying for the

services of visiting nurses or other necessary medical attention or advice in preventing the spread of tuberculosis in the county, or for the purpose of disinfecting any building, room, residence, hotel, or other place in such county infected with tuberculosis, and may cooperate with neighboring counties to establish homes or hospitals for incurable tuberculosis patients.

23-07-20.1. Disclosure of records.

To protect the integrity of disease control records, to ensure their proper use, and to ensure efficient and proper administration of the department's disease control function, it is unlawful for any person to permit inspection of or to disclose information contained in disease control records, including results of laboratory tests, or to copy or issue a copy of all or part of any such record except as authorized by rules.

23-07-21. Penalties.

Except as otherwise provided in this section, a person is guilty of an infraction:

1. Who violates or fails to obey any provision of this chapter, any lawful rule made by the state department of health, or any order issued by any state, district, county, or municipal health officer;
2. Who violates any quarantine law or regulation, or who leaves a quarantined area without being discharged; or
3. Who, knowing that the person is infected with a sexually transmitted disease, willfully exposes another person to infection.

Any person required to make a report under section 23-07-02.1 who releases or makes public confidential information or otherwise breaches the confidentiality requirements of section 23-07-02.2 is guilty of a class C felony.

**CHAPTER 33-06-05
SCHOOL IMMUNIZATION REQUIREMENTS**

Section
33-06-05-01 Requirements

33-06-05-01. Requirements.

1. Definitions. As used in this section:

- a. "Advisory committee on immunization practices" refers to a panel of experts in fields associated with immunization who have been selected by the secretary of the United States department of health and human services to provide advice and guidance to the secretary, the assistant secretary for health, and the centers for disease control and prevention on the most effective means to prevent vaccine-preventable diseases.
- b. "Age-appropriate immunizations" refers to the vaccines a child should receive based on age and previous immunization history as recommended by the advisory committee on immunization practices of the United States department of health and human services and outlined by the North Dakota immunization schedule.
- c. "Beliefs" as used in subsection 3 of North Dakota Century Code section 23-07-17.1 means sincerely held religious, philosophical, or moral beliefs which are not a pretense for avoiding legal requirements.
- d. "Institution" includes all early childhood facilities, head start programs, preschool educational facilities, public and private kindergartens, and elementary, middle, and high schools operating in North Dakota.
- e. "Institutional authority" means anyone designated by the governing body of an institution.
- f. "Medical exemption" means an exemption from an immunization requirement based on a form signed by a licensed physician stating that the physical condition of the child seeking the exemption is such that the vaccine administered would endanger the life or health of the child.

2. Minimum requirements.

- a. Minimum requirements for children attending early childhood facilities, head start programs, and preschool educational facilities shall be age-appropriate immunizations against diphtheria, pertussis, tetanus, poliomyelitis, measles, mumps, rubella,

haemophilus influenzae type B disease, varicella (chickenpox), pneumococcal disease, rotavirus, and hepatitis A.

- b. Minimum requirements for children attending kindergarten through grade twelve shall be age-appropriate immunizations against diphtheria, pertussis, tetanus, poliomyelitis, measles, mumps, rubella, varicella (chickenpox), and meningococcal disease.

3. Effective dates.

- a. Effective with the 1992-93 school year, a second dose of measles, mumps, and rubella vaccine is required for school entry into kindergarten or first grade if the student's school does not have a kindergarten. Each subsequent year, the next higher grade will be included in the requirement so those students transferring into North Dakota schools are added to the measles, mumps, and rubella immunization cohort.
- b. Effective with the 2000-01 school year, a student must complete the hepatitis B vaccine series prior to entry into kindergarten or first grade if the student's school does not have a kindergarten. Each subsequent year, the next higher grade will be included in the hepatitis B immunization requirement so those students transferring into North Dakota schools are added to the hepatitis B immunization cohort.
- c. Effective January 1, 2004, in order to attend an early childhood facility, head start program, or preschool educational facility, each child must be adequately immunized against varicella (chickenpox) disease according to the advisory committee on immunization practices.
- d. Effective with the 2004-05 school year, a student must receive the varicella (chickenpox) vaccine before being admitted into any kindergarten or first grade if the student's school does not have a kindergarten. Each subsequent year, the next higher grade will be included in the varicella immunization requirement so those students transferring into North Dakota schools are added to the varicella immunization cohort.
- e. Effective January 1, 2008, in order to attend an early childhood facility, head start program, or preschool educational facility, each child must be adequately immunized according to the advisory committee on immunization practices against pneumococcal disease, rotavirus, and hepatitis A.
- f. Effective with the 2008-09 school year, a student must receive a second dose of varicella (chickenpox) vaccine before being admitted into kindergarten or first grade if the student's school

does not have a kindergarten. Each subsequent school year, the next higher grade will be included in the second dose varicella (chickenpox) immunization requirement so those students transferring into North Dakota schools are added to the second dose varicella (chickenpox) immunization cohort.

- g. Effective with the 2014-15 school year, a student must receive meningococcal and tetanus, diphtheria, and pertussis (tdap) vaccine before being admitted into any seventh grade.
4. **Exemptions.** A child with a medical or a beliefs exemption is exempt from any one or all of the immunization requirements. A physician must sign an exemption form indicating the vaccines that are included in the medical exemption. A parent or guardian must sign an exemption form stating that the child has a beliefs exemption and indicate which vaccines are exempt because of beliefs. A child with a reliable history of chickenpox disease is exempt from varicella (chickenpox) immunization requirements. A physician or parent or guardian must sign an exemption form stating that the child has had chickenpox disease. Exemption forms must be kept on file with the immunization records at the child's school, early childhood facility, head start program, or preschool educational facility.
 5. **Recordkeeping and reporting.** Records and reports requested by the state department of health shall be completed and submitted to the state department of health.
 - a. Certificates of immunization, a North Dakota immunization information system (NDIIS) record, or other official proof of immunization must be presented to the designated institutional authority before any child is admitted to an institution.
 - b. Upon request by the institutional authority and approval by the department, the department shall provide access to the NDIIS by institutional authority. The department of health shall disclose immunization records maintained by the NDIIS to an institutional authority to fulfill the required proof of immunization.
 - c. The parent or guardian of a child claiming a medical or beliefs exemption shall present an appropriately signed statement of exemption to the designated institutional authority. Proof of immunization or the statement of exemption must be maintained by the child's school or early childhood facility.
 - d. The school or early childhood facility immunization summary report must be submitted to the state department of health by November first of each year or such other annual date as the department may designate.

6. **Appointment of an institutional authority.**

- a. An institutional authority shall be appointed for each institution by its governing board or authorized personnel. The authority must be an employee of such institution.
- b. The name of the designated institutional authority, the institution, address, and telephone number shall be submitted to the appropriate governing state department by July first of each year.

7. **Provisional admission - Exclusion.** Any child admitted to school or early childhood facility under the provision that such child is in the process of receiving the required immunizations shall be required to receive the immunizations according to the recommended schedule set forth by the state department of health. Any child not adhering to the recommended schedule shall provide proof of immunization or a certificate of immunization within thirty days of enrollment or be excluded from school or early childhood facility.

History: Amended effective November 1, 1979; September 1, 1991; January 1, 1998; February 1, 2000; January 1, 2004; January 1, 2008; January 1, 2014.

General Authority: NDCC 23-01-03

Law Implemented: NDCC 23-07-17.1



North Dakota law requires this form be completed* and provided to the childcare facility or school.

Child's Name (Last, First, Middle Initial):			Date of Birth:				
Parent's Name:			Telephone Number:				
Vaccine Type		Exemption Check type below [€]	Enter Month/Day/Year for Each Immunization Given				
Hepatitis B	Hepatitis B	<input type="checkbox"/>					
Rotavirus	Rotavirus	<input type="checkbox"/>					
Hib	<i>Haemophilus influenzae</i> type B	<input type="checkbox"/>					
PCV	Pneumococcal conjugate	<input type="checkbox"/>					
DTP/DTaP/DT	Diphtheria-Tetanus-Pertussis	<input type="checkbox"/>					
OPV/IPV	Polio	<input type="checkbox"/>					
MMR	Measles-Mumps-Rubella	<input type="checkbox"/>					
Varicella	Chickenpox	<input type="checkbox"/>			History of Disease Date:		
Hepatitis A	Hepatitis A	<input type="checkbox"/>					
Td/Tdap	Tetanus-Diphtheria (and Pertussis)	<input type="checkbox"/>					
MCV4	Meningococcal	<input type="checkbox"/>					
HPV	Human Papillomavirus	<input type="checkbox"/>					
Other		<input type="checkbox"/>					

To the best of my knowledge, this person has received the above-indicated immunizations on the above dates.

Physician, Nurse, Local/State Health	Title	Date
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If additional doses are added after initial signature, please initial dose and sign below.

Update signature #1:		
Physician, Nurse, Local/State Health:	Title:	Date:
Update signature #2:		
Physician, Nurse, Local/State Health:	Title:	Date:

My child has not met the minimum requirements for his/her age. I agree to resume immunizations within 30 days from the date I was notified (today's date noted below) that my child's immunizations are incomplete and to submit a signed Certificate of Immunization.

Parent/Guardian Signature: _____ Date: _____

Statement of Exemption to Immunization Law

In the event of an outbreak, exempted persons may be subject to exclusion from school or childcare facility.

Medical Exemption: The physical condition of the above-named person is such that immunization would endanger life or health or is medically contraindicated due to other medical conditions.

Physician Signature:	Date:
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[€]**Exemption:** (Indicate vaccine above)

(Please check one) Religious Philosophical Moral History of Disease

Parent/Guardian Signature	Date
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NDSU CENTER FOR IMMUNIZATION RESEARCH AND EDUCATION

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Immunization Practices and Policies in North Dakota

North Dakota State University
Department of Public Health
Center for Immunization Research and Education (CIRE)

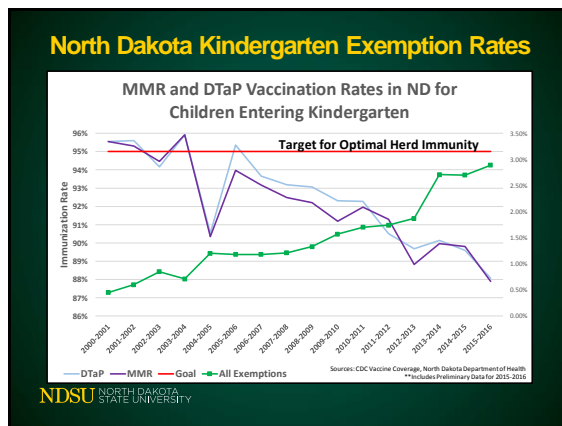
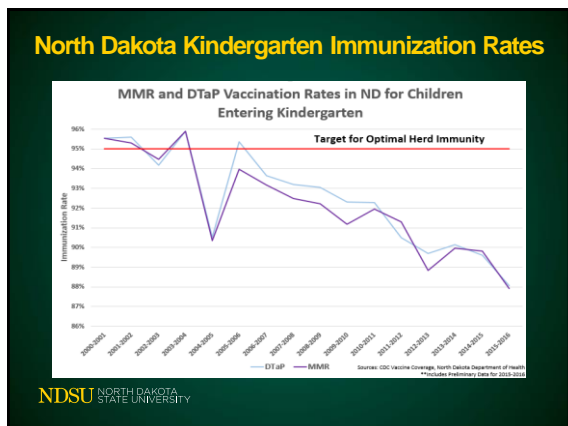
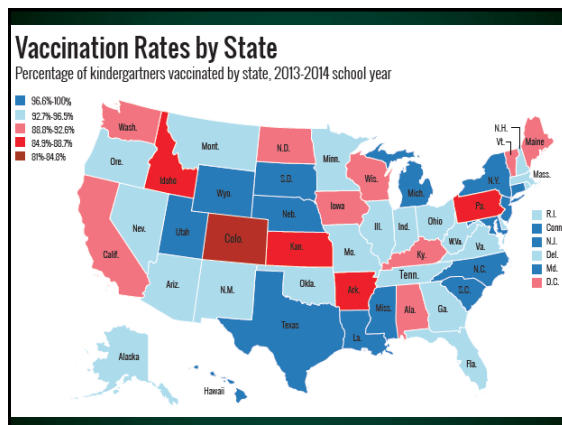
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Purpose

- To learn about immunization policy, practices, knowledge, attitudes and beliefs in North Dakota, and contrast that with other states
 - Exemptions to school vaccination requirements
- To have focus group discussions on immunization policies and practices
- To make suggestions for potential policy, process, or rule changes in N.D.

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Focus Group and One-on-One Questions: Sector Specific

Physicians/Health Care Providers/Nurses

Opening Question:

Who are you, what area of medicine do you work in, and how long have you been working with immunization programs/records/policy/etc.?

Transition Questions:

From what you experience in your position, what do you think the prevailing opinion about immunizations are?

In your position, what do you hear people/parents/organizations saying about immunizations and immunization exemptions?

How well do you feel you know the current ND laws and policies regarding obtaining exemptions to school immunization requirements?

Key Questions:

Exemptions

How often do parents request exemptions to immunizations in your practice?

What reasons do parents give when requesting exemptions to immunizations?

When requesting exemptions, are parents requesting exemptions to one vaccine, multiple vaccines, or all vaccines?

In your practice, what is the process for granting a medical exemption to child care or school immunization requirements for children?

When granting such an exemption, what evidence do you require?

In your practice, what is the process for granting children an exemption to a vaccination based on a prior history of the disease?

Which vaccines do you grant a history of disease exemption for?

When granting such an exemption, what evidence do you require?

Is the parents' history of disease statement for the child alone sufficient?

Practice & Procedure

What is your general approach to the vaccine hesitant parent?

How do you handle non-vaccinating families?

Do you make them wear masks?

Do you schedule their appointments at a certain time of day?

Do you use a declination form?

Do you dismiss them from your practice?

Do you conduct reminder/recall for kids entering kindergarten in need of immunizations?

How well does the current NDIIS system work in your practice for providing accurate and timely vaccine information on your patient?

How well does the NDIIS system interface with your electronic medical record, if you have one?

Please describe how vaccine exemptions are uploaded into the NDIIS within your practice?

Who updates NDIIS?

Who uses/has access to NDIIS?

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?
What are the weaknesses of the current policy?
Challenges?
Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?
What are the weaknesses of the current policy?
Challenges?
Unintended consequences?

How do the current immunization requirements and exemption policies in the state affect your practice?
Would you support an immunization exemption policy change, such as a state requirement that parents must visit with a physician or healthcare provider for immunization education and obtain a signature prior to filing a personal belief exemption to school officials?

How could this be implemented?

What type of health care provider should be able to provide immunization education and sign the exemption form?

Do you feel that additional immunizations need to be added to the school immunization requirements?

If so, which immunizations should be added?

How should the school immunization requirements be enforced?

Whose responsibility is it to enforce the school immunization requirements?

Should immunization rates and exemption rates be published by school?

Ending Questions:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How best should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the Exemption Policy, are there any specific needs that may arise for you or your practice (*i.e.*, technological or program changes, training and education for providers and/or staff)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

Public Health Nurses, Public Health Employees, Local Public Health Agencies & Organizations

Opening Question:

Tell us who you are, what area of public health you work in, and how long have you been working with immunization programs/records/policy/etc.?

Transition Questions:

From what you experience in your position, what do you think the prevailing opinion about immunizations are?

In your position, what do you hear people/parents/organizations saying about immunizations and immunization exemptions?

****How well do you feel you know the current ND laws and policies regarding obtaining exemptions to school immunization requirements?**

Key Questions:

Exemptions

How often do parents request exemptions to immunizations in your practice?

What are the reasons that parents give when requesting exemptions to immunization?

When requesting exemptions, are parents requesting exemptions to one vaccine, multiple vaccines, or all vaccines?

Practice and Procedure

What is your general approach to the vaccine hesitant parent?

How do you help patients, schools, and community members understand the immunization requirements and exemption policy in North Dakota?

Do you work with schools to determine vaccine compliance?

Do you work with schools to complete the school immunization survey?

If yes, how do you work with schools to complete the school survey?

Do you give vaccines in schools?

If yes, which grades do you vaccinate?

If yes, which vaccines do you give?

How often do you hold vaccine clinics in schools?

If no, why not?

Do you conduct reminder/recall for kids entering kindergarten in need of immunizations?

How much time per month does it take your facility to process immunization records requests for back to school?

How well does the current NDIIS system work for providing accurate and timely vaccine information on patients?

Please describe how vaccine exemptions are uploaded into the NDIIS within your practice?

Who updates NDIIS?

Who uses/has access to NDIIS?

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Unintended consequences?

What are the main challenges with the current immunization requirements, enforcement, and the exemption policy?

How can these challenges be addressed?

How do the current immunization exemption policies in the state affect your work?

Would you support an immunization exemption policy change, such as a state requirement that parents must visit with a physician or healthcare provider for immunization education and obtain a signature prior to filing a personal belief exemption to school officials?

How should this be implemented?

What type of healthcare provider should be able to provide education and sign the form?

Do you feel that additional immunizations need to be added to the school immunization requirements?

If so, which ones?

Whose responsibility is it to enforce the school immunization requirements?

How should the school immunization requirements be enforced?

Should immunization and exemption rates be published by school?

Do you feel that the immunization requirements are enforced by the schools in your area?

Ending Questions:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the Exemption Policy, are there any specific needs that may arise for you, your agency, and/or your members (*i.e.*, technological or program changes, training and education for staff, revisions to reporting requirements and/or data collection methods)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

School Superintendents, Principals, Nurses, and Secretaries

Opening Question:

Tell us who you are, what school you work in and your position, and how long you have been working in this school system.

Transition Questions:

From what you experience in your position, what do you think the prevailing opinion about immunizations are?

In your position, what do you hear people/parents/organizations saying about immunizations and immunization exemptions?

How well do you feel you know the current ND laws and policies regarding obtaining exemptions to school immunization requirements?

Key Questions:

Exemptions

How are/were you made aware of North Dakota's immunization requirements and exemption policy?

What kind of education are you given on immunization requirements and exemption policies?

Practice and Procedure

When and how do you notify parents of the immunization requirements necessary for school entry?

Does your school determine a child's vaccination status before the start of school so that parents can be notified by the first day of school if their child needs additional vaccinations?

How does your school work with parents to obtain immunization records?

Does your school use an electronic system or is everything paper based?

If your school uses an electronic system to obtain immunization records, which one do they use?

Who collects the immunization records?

When are records collected?

Where are they filed?

Who compiles all of the immunization records/data for the school immunization survey?

Where does collecting immunization records rank in your list of priorities during the beginning of the school year?

What is your school procedure for students that do not have an immunization record on file?

Are there certain groups of students who are less likely to have an immunization record? (i.e. out of state, military)

If a child does not meet the immunization requirements required for school entry, what actions are taken at your school?

If a non-compliant child does not meet the requirements after the 30 day grace period, what actions are taken at your school?

What factors affect your decision to enforce/not enforce the immunization requirement?

What are your main challenges with implementing and enforcing the immunization policy?

How can these challenges be addressed?

If you do not exclude non-compliant students, what factors prevent you from excluding?

Do you ever encourage parents to claim an exemption if they do not have an immunization record for their child?

Does your school use the North Dakota Immunization Information System?

If yes, who in your school knows how to use this system?

Does your school/school nurse use the North Dakota Immunization Information System to look up immunization records?

What kind of education are staff given on the reading of immunization records?

Do you ever accept a history of disease exemption for a disease other than chicken pox?
At your school, who fills out the immunization school survey for the North Dakota Department of Health?

What information/materials could improve the process of completing the school survey for you?
Do you feel you are given an adequate amount of time to collect student data before the school immunization survey is due?

If no, what amount of time would be adequate?

Would you prefer the survey to be released earlier in the school year with an earlier due date?
How long does it take your school staff members to complete the school immunization survey?

Does your local public health unit assist you with the school immunization survey?

If no, have you asked for their assistance?

Do you feel the data you provide you completing the school immunization survey is relatively accurate?

Who do you call if you have questions regarding the school survey or immunization policies?

How well do you feel changes to immunization requirements and immunization exemption policies in North Dakota are communicated by state and local public health officials?

What would be the best way to receive information on immunization requirements and exemptions in the future?

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

Whose responsibility is it to enforce the school immunization requirements?

How should the school immunization requirements be enforced?

Do you think there should be penalties for allowing non-compliant students to attend school or incentives for schools that have fully compliant students?

Should immunization and exemptions rates be published by school?

Ending Question:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How best should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the Exemption Policy, are there any specific needs that may arise for you or your constituents (*i.e.*, technological or program changes, revisions to school or district level policies, training and education for parents and guardians, tailored communications to parents and guardians)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

***North Dakota Department of Public Instruction, North Dakota
Attorney General, North Dakota Department of Health, North Dakota
Governor's Office***

Opening Question:

Tell us who you are, what area of North Dakota government you work in, and how long you have been working for the state of North Dakota.

Transition Questions:

From your position, what challenges do you see in North Dakota's current immunization requirements and policies, if you see any?

Key Questions:

Practice

Whose responsibility is it to enforce the school immunization requirement?

How should the school immunization requirements be enforced?

Do you think there should be penalties for allowing non-compliant students to attend school or incentives for schools that have fully compliant students?

How do your individual departments encourage the enforcement of school immunization requirements?

How do you work with schools to make sure the school immunization survey is completed?

How do you work with schools to make sure the school immunization requirements are followed?

What are your main challenges with schools abiding by the immunization policy?

How can these challenges be addressed?

Do you have suggestions to improve the process of ensuring that students are compliant with the school immunization requirements?

Department of Public Instruction

Does the North Dakota Department of Public Instruction encourage the enforcement of school immunization requirements?

How do you work with schools to make sure the school immunization survey is completed?

How do you work with schools to make sure the school immunization requirements are followed?

What are your main challenges with schools abiding by the immunization policy?

How can these challenges be addressed?

Department of Health

How does the state health department assist local schools in completing the school survey?

What are the main challenges the state health department faces with the current immunization requirements and exemption policy?

How are these challenges addressed?

What are ways to strengthen the current immunization requirements?

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

Should immunization and exemption rates be published by school?

What process would be required to change the current immunization requirements or exemption policy?

What changes would require a change in legislation versus a rule change?

Ending Question:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How best should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the immunization exemption policy, are there any specific needs that may arise for you or your constituents (*i.e.*, technological or program changes, revisions to school or district level policies, training and education for parents and guardians, tailored communications to parents and guardians)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

Parent, Guardian and Advocacy Organizations

Opening Question:

Tell us who you are, what you do for a living, and what you enjoy most about your job.

Transition Questions:

From your experiences, what do you think the prevailing opinion about immunizations are?

What do you hear people/parents/organizations saying about immunizations and immunization exemptions?

How well do you feel you know the current ND laws and policies regarding obtaining exemptions to school immunization requirements?

Key Questions:

Practice and Procedure

Where do you go to get information about vaccine safety?

Where do you go for information on immunizations and immunization exemptions in North Dakota?

How do schools communicate their immunization requirements to parents?

How have you obtained your child's immunization record in the past?

Where do you go if you have questions about immunizations or school immunization requirements?

Is your school able to answer your questions?

Do your children's schools and daycare facilities abide by the state's immunization requirements?

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

If your child was not up to date with the immunization requirements, how would you feel if he/she was kept out of school until they began receiving the necessary immunizations?

What actions would you take if this were to occur?

Why should/shouldn't there be a personal belief exemptions to immunizations in North Dakota?

Whose responsibility is it to enforce the school immunization requirements?

How should the school requirements be enforced?

Should immunization and exemption rates be published by school?

Why should/shouldn't children be immunized to attend school?

Ending Question:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How best should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the Exemption Policy, are there any specific needs that may arise for you, your agency, and/or your members (*i.e.*, technological or program changes, training and education for staff, revisions to reporting requirements and/or data collection methods)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

North Dakota State Legislators

Opening Question:

Tell us who you are, what district you represent, and how long you have served in the North Dakota Legislature.

Transition Questions:

From what you experience in your position, what do you think the prevailing opinion about immunizations are?

In your position, what do you hear people/parents/organizations saying about immunizations and immunization exemptions?

How well do you feel you know the current ND laws and policies regarding obtaining exemptions to school immunization requirements?

Key Questions:

Policy

What are your thoughts and opinions regarding North Dakota's current immunization requirements?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

What are your thoughts and opinions regarding North Dakota's current Personal Belief Exemption Policy for Immunizations?

What are the strengths of the current policy?

What are the weaknesses of the current policy?

Challenges?

Unintended consequences?

What are ways to strengthen the current immunization requirements?

What changes to the law/policy are legal?

Do you think there should be penalties for allowing non-compliant students to attend school or incentives for schools that have fully compliant students?

If yes, who should receive these incentives or penalties?

Whose responsibility is it to enforce the school immunization requirements?

How should the school immunization requirements be enforced?

Should immunization and exemptions rates be published by school?

Practice and Procedure

What process would be required to change the current immunization requirements or exemption policy?

Ending Question:

Do you think revisions should be made to the North Dakota Personal Belief Exemption policy?

What are your suggestions for revisions to North Dakota's current Personal Belief Exemption Policy for Immunizations?

How should changes to the current policy be actualized?

How best should these changes be communicated to you and your constituents?

If revision(s) are made to the Exemption Policy, what barriers exist, if any, to the adoption of the changes?

If revision(s) are made to the Exemption Policy, are there any specific needs that may arise for you, your agency, and/or your members (*i.e.*, technological or program changes, training and education for staff, revisions to reporting requirements and/or data collection methods)?

Is there anything that we missed? Is there anything that you came wanting to say that you did not get a chance to say?

Appendix E. Chiropractic Survey Questions

Chiropractic Survey Questions

Q1. Age: (Required)

- Under 25
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

Q2. Race: (Optional, Can Select More Than One)

- White
- Black/African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Pacific Islander
- Other _____

Q3. Sex: (Required)

- Male
- Female

Q4. Occupation: (Required)

- Chiropractor
- Other _____

Q5. Zip Code of Medical Practice: (Optional)

Q6. Which school did you attend for your medical training? (Optional) _____

Q7. Does the topic of vaccination come up in your practice?

- Yes
- No

Q8. If yes, how often does the topic of vaccination come up in your practice?

- Never
- Rarely
- Sometimes
- Frequently
- Usually
- All of the Time

Q9. If yes to question 7, when the topic of vaccination comes up in your practice, who initiates the conversation?

- Healthcare Provider
- Patient
- Other: Please Specify _____

Q10. Do you feel that counseling others on their decision to vaccinate or not to vaccinate falls within your scope of practice?

- Yes
- No
- Unsure

Q11. How well do you feel your chiropractic/naturopathic medicine training and education prepared you to counsel people on immunization?

- Not well at all
- Slightly well
- Moderately well
- Very well
- Extremely well

Q12. How often do you recommend vaccinations in your practice?

- Never
- Rarely
- Sometimes
- Frequently
- Usually
- All of the Time

Q13. How likely are you to recommend vaccines if a patient asks about them?

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

Q14. Do you utilize vaccines for your own health?

- Yes
- No
- Unsure

Q15. Would you vaccinate/do you vaccinate your children?

- No, not at all.
- Yes, with some recommended vaccinations.
- Yes, with most recommended vaccinations.
- Yes, with all recommended vaccinations.

Q16. If you were traveling to another country in which certain infectious diseases were prevalent and recommended vaccines were available, would you seek out and undergo prior vaccination?

- Yes
- No
- Unsure

Q17. How familiar are you with North Dakota's school and child care immunization laws and policies?

- Not familiar at all
- Slightly familiar
- Moderately familiar
- Very familiar
- Extremely familiar

Q18. What would you estimate the percentage of kindergartners fully vaccinated against diphtheria, tetanus, pertussis, measles, mumps, rubella, and varicella (chickenpox) was in North Dakota in 2014-2015?

- 80-84%
- 85-89%
- 90-94%
- 95%+

Q19. According to North Dakota's Century Code, children entering kindergarten and seventh grade must have age-appropriate immunizations or have an exemption on file for those immunizations to attend school. Do you agree with this policy?

- Yes
- No
- Unsure

Q20. Do you think immunization rates should be published by school in North Dakota?

- Yes
- No
- Unsure

Q21. Currently in North Dakota, parents can sign a form to claim a religious exemption to immunization in order for their child to attend child care or school. Do you think North Dakota should allow a religious exemption to immunization?

- Yes
- No
- Unsure

Q22. Currently in North Dakota, parents can sign a form to claim a philosophic or moral exemption, sometimes referred to as a personal belief exemption, to immunization in order for their child to attend child care or school. Do you think North Dakota should allow a personal belief exemption to immunization?

- Yes
- No
- Unsure

Q23. Currently in North Dakota, parents can sign a form to claim a philosophic or moral exemption to immunization for their child in order to attend child care or school. Do you think parents/guardians should have to meet with a physician, healthcare provider, or public health employee to receive vaccine education before they can file a philosophic or moral exemption to immunization for their child?

- Yes
- No
- Unsure

Please state your level of agreement with the following statements.

Q24. The low risk of adverse reactions to vaccines is acceptable because the majority of the population gains protection against an infectious disease.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q25. There is proof that immunization prevents infectious disease.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q26. Vaccines have changed the incidence of many major infectious diseases.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q27. Vaccines prevent more diseases than they cause.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q28. Vaccines should be given to elderly persons.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q29. Vaccines should not be given to infants under 1 year of age as they may weaken the immune system.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q30. In general, contracting an infectious disease naturally is better than being vaccinated against it.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q31. On a scale of 0-10, with 0 being not at all concerned and 10 being very concerned, how concerned are you about vaccinations overall?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Q32. On a scale of 0-10, with 0 being not safe at all and 10 being extremely safe, how safe do you think vaccines are overall?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Q33. Which vaccines do you believe are not safe? Please select all that apply.

- All are safe
- None are safe
- Diphtheria/Tetanus/Pertussis
- Haemophilus influenza b (Hib)
- Hepatitis A
- Hepatitis B
- Human Papillomavirus (HPV)
- Influenza
- Measles/Mumps/Rubella
- Meningococcal
- Pneumococcal
- Polio
- Varicella (Chickenpox)
- Other: (Please specify) _____
- Unsure

Q34. Which vaccine do you believe is the “least safe”?

- All are safe
- None are safe
- Diphtheria/Tetanus/Pertussis
- Haemophilus influenza b (Hib)
- Hepatitis A
- Hepatitis B
- Human Papillomavirus (HPV)
- Influenza
- Measles/Mumps/Rubella
- Meningococcal
- Pneumococcal
- Polio
- Varicella (Chickenpox)
- Other: (Please specify) _____
- Unsure

Q35. Where do you get your information or recommend your patients get information about vaccines and vaccine safety? (Can select more than one)

- Primary Care Physician
- Coworkers
- Public Health Workers
- Family and Friends
- Textbooks
- Internet Search Engines
- Social Media
- Television or Radio
- Trusted websites (Centers for Disease Control and Prevention or other public health websites)
- Other: (please specify) _____

Q36. Are you aware of someone who has had a negative or harmful reaction to vaccination?

- Yes
- No
- Unsure

Q37. If yes, which vaccine(s) did they have a negative or harmful reaction to? (Can select more than one)

- Diphtheria/Tetanus/Pertussis
- Haemophilus influenza b (Hib)
- Hepatitis A
- Hepatitis B
- Human Papillomavirus (HPV)
- Influenza
- Measles/Mumps/Rubella
- Meningococcal
- Pneumococcal
- Polio
- Varicella (Chickenpox)
- Other: (Please specify) _____
- Unsure

Q38. On a scale of 0 to 10, with 0 being not at all beneficial and 10 being very beneficial, how beneficial do you believe vaccines are overall?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Q39. Which vaccine do you believe is the “most beneficial”?

- All are beneficial
- None are beneficial
- Diphtheria/Tetanus/Pertussis
- Haemophilus influenza b (Hib)
- Hepatitis A
- Hepatitis B
- Human Papillomavirus (HPV)
- Influenza
- Measles/Mumps/Rubella
- Meningococcal
- Pneumococcal
- Polio
- Varicella (Chickenpox)
- Other: (Please specify) _____
- Unsure

Q40. Do you believe that current recommendations to give multiple vaccines in one setting is safe, or do you believe they need to be spaced out more than the current recommended schedule?

- The current recommendations for multiple vaccines in one setting is safe
- Vaccinations should be spaced out more than the current recommended schedule
- Unsure

Q41. How well do you think you understand the risks associated with vaccination?

- Not well at all
- Slightly well
- Moderately well
- Very well
- Extremely well

Q42. How risky do you believe vaccines are?

- Very risky
- Moderately risky
- Minimally risky
- No risk
- Uncertain

Q43. Please write any additional comments here:

	Medical				Religious				Personal Belief				Miscellaneous																						
	Physician Note/Signature Required	Permanent Medical Exemption Only	Distinguishes between permanent and temporary medical exemptions	Renewal Required	Written Statement from healthcare provider required	Notary Signature Required	Form Available Online	Renewal Required	Written Statement Replaces Form	Notary Signature Required	Completion of Educational Component Required	Physician Signature Required	Signature of Religious Official Required	Form Available at Health Department	Form Available Online	Renewal Required	Written Statement Replaces Form	Notary Signature Required	Completion of Educational Component Required	Physician Signature Required	Form Available at Health Department	Form Available Online	History of Disease Exemption Allowed	Parental Education Required to Obtain Exemption	Approval Goes Through Department of Health	Affidavit Required	Exemptions for Individual Vaccines Available	Exclusion of Exempted Students During an Outbreak	Parents Must Acknowledge Risk of Exclusion During Outbreak	Schools can be Penalized for Non-Compliance with State Policies***	Non-Compliance Penalties Enforced ***	Parents Informed of Potential Exemption Consequences***			
ALABAMA	x	x						x								x							x	x				x	x*						
ALASKA	x	x					x	x															x	x				x	x	†					
ARIZONA	x		x				x																	x			x	x	NA	x					
ARKANSAS	x		x	x			x	x								x	x	x	x				x	x	x		x	x	x	x	x				
CALIFORNIA	x		x		x																		x	x						NA	x				
COLORADO	x						x									x							x				x	x			x				
CONNECTICUT	x	x	x				x																x								x				
DELAWARE	x																						x								x	x*			
DISTRICT OF COLUMBIA	x						x																x								x	x	x		
FLORIDA	x		x																				x								x	x	x		
GEORGIA	x		x	x																			x								x	x*			
HAWAII	x		x																				x ⁶								x	x	x		
IDAHO	x						x																x								x	x*			
ILLINOIS	x	x																					x								x	x	x		
INDIANA	x		x	x			x																x								x	x	x		
IOWA	x		x	x			x																x								x	x			
KANSAS	x			x			x																x								x	x*	x		
KENTUCKY	x						x																x								x	x			
LOUISIANA	x				x																		x								x	x	x		
MAINE	x			x	x																		x	x							x	x	NA		
MARYLAND	x		x				x																x								x	x			
MASSACHUSETTS	x			x	x																		x								x	x*	x		
MICHIGAN	x		x																				x								x	x	x		
MINNESOTA	x						x																x								x	x			
MISSISSIPPI	x																						x								x	x			
MISSOURI	x	x																					x								x	x	NA	x	
MONTANA	x		x				x																x								x	x	NA		
NEBRASKA	x						x																x								x	x			
NEVADA	x																						x								x	x	x		
NEW HAMPSHIRE	x			x	x																		x								x	x	NA	NA	NA
NEW JERSEY	x		x		x																		x								x	x	x		
NEW MEXICO	x			x			x																x								x	x	NA		
NEW YORK	x		x	x			x																x								x	x	x		
NORTH CAROLINA	x		x				x																x								x	x			
NORTH DAKOTA	x	x					x																x								x	x	x		
OHIO	x				x																		x								x	x	x		
OKLAHOMA	x						x																x								x	x			
OREGON	x				x																		x								x	x	x		
PENNSYLVANIA	x		x		x																		x								x	x*	x		
RHODE ISLAND	x						x																x								x	x*	x		
SOUTH CAROLINA	x		x																				x								x	NA	x		
SOUTH DAKOTA	x	x			x																		x								x	NA	NA	NA	

	Medical									Religious							Personal Belief					Miscellaneous										
	Physician Note/Signature Required	Permanent Medical Exemption Only	Distinguishes between permanent and temporary medical exemptions	Renewal Required	Written Statement from healthcare provider required	Notary Signature Required	Form Available Online	Renewal Required	Written Statement Replaces Form	Notary Signature Required	Completion of Educational Component Required	Physician Signature Required	Signature of Religious Official Required	Form Available at Health Department	Form Available Online	Renewal Required	Written Statement Replaces Form	Notary Signature Required	Completion of Educational Component Required	Physician Signature Required	Form Available at Health Department	Form Available Online	History of Disease Exemption Allowed	Parental Education Required to Obtain Exemption	Approval Goes Through Department of Health	Affidavit Required	Exemptions for Individual Vaccines Available	Exclusion of Exempted Students During an Outbreak	Parents Must Acknowledge Risk of Exclusion During Outbreak	Schools can be Penalized for Non-Compliance with State Policies***	Non-Compliance Penalties Enforced ***	Parents Informed of Potential Exemption Consequences***
TENNESSEE	X				X				X														X							X	X*	
TEXAS	X			X	X			X					X			X							X	X					X	X*	X	
UTAH	X												X										X						X	X*		
VERMONT	X						X	X						X									X	X					X	X*	X	
VIRGINIA	X		X		X					X				X									X			X	X		X	X*		
WASHINGTON	X		X				X							X								X	X			X	X		X	X*	X	
WEST VIRGINIA	X		X				X							X									X						X	X		
WISCONSIN	X						X							X									X			X	X		X	X		
WYOMING	X					X	X		X					X									X			X	X		NA	NA	NA	
TOTALS	51	7	20	10	14	2	25	10	17	14	2	2	1	7	24	4	4	2	3	1	4	9	51	8	6	2	46	28	2	41	35	23

NA = Not Available

x* = Variable; In some cases it applies

° = The Hawaii Department of Health states that a religious exemption form can be obtained from a child's school; state code requires an objection in writing.

° = In Oklahoma, the religious exemption form can be signed by a religious leader or parent/guardian

x** = Form must be signed by representative at local health department

† = Reported as unknown

*** = Association of Immunization Manager Survey - Fall 2015

In Texas, yearly renewal of medical exemptions are required unless the exemption is permanent.

In Arkansas and Texas, the religious and personal belief exemption forms are available from the state health department.

In Illinois, religious exemptions must be renewed in kindergarten, sixth, and ninth grade.

In Massachusetts, renewal of the religious exemption is suggested, not mandatory.

California will only have medical exemptions beginning July 2016.

Vermont will have medical and religious exemptions in July 2016.

Appendix G. Focus Group Totals

Sector	Occupation	Fargo Region	Grand Forks Region	Bismarck/Mandan Region	Williston Region	Minot Region	Dickinson Region	Total
Schools	Superintendents	3	1	3	1		1	9
	Principals	5	2	3			2	12
	Nurses	9	2	3		1		15
	Staff	9	2	3	5			19
Public Health	Nurses	6	6	10	1	6	8	37
	Staff			1	1	2	2	6
Clinical	Family Physicians	3			1	2		6
	Pediatricians	5			1	3	4	13
	Advanced Practice Providers	1				1		2
	Residents					13		13
	Nurses	8			4	5	7	24
	Other	2						2
State Government	Dept. of Health			4				4
	Dept. of Public Instruction			2				2
	Attorney General's Office			2				2
	Legislators	3	1	1			1	6
Parents	Parents	9			2		5	16
Others	Others	1						1
Total		64	14	32	16	33	30	189