

The Pump Handle



"I had an interview with the Board of Guardians of St. James's parish, on the evening of Thursday, 7th September, and represented the above circumstances to them. In consequence of what I said, the handle of the pump was removed on the following day."

John Snow, 1855

June 2015 Topics

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New Recommendations from ACIP

The Advisory Committee on Immunization Practices (ACIP) is a group of medical and public health experts who are responsible for making vaccine recommendations in the United States. The ACIP meets three times a year to discuss and vote on immunization recommendations. The ACIP met on June 24 and 25 and are making new vaccination recommendations.

Meningococcal B Vaccine

ACIP made recommendations for the use of serogroup B meningococcal vaccines for individuals at increased risk (microbiologists, outbreak settings, asplenia, persistent complement component deficiencies) for serogroup B meningococcal disease at its meeting in February. However, no recommendations were made for healthy adolescents at that time. During the most recent meeting, the ACIP discussed at length the pros and cons of making a routine recommendation for meningococcal vaccines in adolescents. ACIP voted in favor of a Category B (permissive) recommendation, which leaves the decision to vaccinate up to the clinician and the patient. A Category B recommendation also enables coverage of MenB vaccines by the Vaccines for Children (VFC) program and most insurance plans. The ACIP recommended that the meningococcal B vaccine series may be administered to people 16 through 23 years of age, with a preferred age of vaccination of 16 through 18 years.

Two meningococcal B vaccines are currently licensed for use in the United States; Bexsero[®] (Novartis) and Trumenba[®] (Pfizer). Bexsero[®] is a two-dose series, with each dose separated by six months. Trumenba[®] is a three-dose series, with the second dose two months after the first and the third dose six months after the first.

Pneumococcal Conjugate Vaccine

In August 2014, the ACIP voted to recommend routine use of Prevnar13[®] (PCV13) for adults 65 and older. PCV13 was recommended for everyone 65 and older, followed by a dose of Pneumovax23[®] (PPSV23). If PCV13 was given first, providers were recommended to wait six to 12 months before administering PPSV23; however, if PPSV23 was administered first, the recommended interval was 12 months before PCV13 could be administered.

In order to harmonize the recommendations, the ACIP voted to change the minimum interval between pneumococcal vaccines to one year or longer regardless of the vaccine given first, for adults 65 and older. However, doses given at an interval shorter than the recommended interval do not need to be repeated. The interval between PCV13 and PPSV23 for persons younger than age 65 years at increased risk of invasive pneumococcal disease was not changed.

HPV vaccine

During its February 2015 meeting, the ACIP recommended HPV 9 (Gardasil9[®]) as one of the three vaccines that can be used for routine HPV vaccination. During their June meeting, the ACIP discussed revaccination of persons who have previously received a full series of either the 2- or 4-valent HPV vaccine. The benefit of protection against the five additional types included in 9vHPV is primarily for females for protection against cervical cancers and precancers. Only a small percentage (about 4%) of HPV-associated cancers in males is caused by the five additional types included in the 9-valent vaccine. However, a study has shown no serious safety concerns among females revaccinated with 9vHPV after a series of 4vHPV. The ACIP did not vote on recommendations for revaccination, which means that the VFC program and insurance plans probably won't cover revaccination.



Suspect Avian Influenza Case Highlights Need for Gathering Travel and Exposure History

In June 2015, the North Dakota Department of Health (NDDoH) tested its first potential case of avian influenza in a possibly exposed human since avian influenza outbreaks began occurring in the United States beginning in December 2014. The individual was an employee of a North Dakota company that had provided temporary personnel to assist with the final disposal of birds, eggs and other contaminated material resulting from the depopulation of influenza A H5N2 positive flocks in another state. After returning to North Dakota with a fever and cough, NDDoH initiated an investigation into whether or not this could be a case of avian influenza. The individual under investigation ultimately tested negative for avian influenza. No human cases associated with the current avian influenza outbreak in the United States have been identified, but transmission to humans is theoretically possible, and has occurred with other influenza A H5 strains.

Although the individual ended up not being an avian influenza case, their exposure history and timeline fit well with the profile of someone who may have contracted avian influenza. Anyone exposed to birds sick or dead with avian influenza, their droppings or contaminated materials from their environment in the 10 days leading up to a respiratory illness should be evaluated for

avian influenza. Common symptoms of avian influenza in humans include fever with a cough, sore throat, muscles aches, malaise and conjunctivitis. Even when no active outbreaks are occurring in North Dakota, North Dakota residents may be involved in avian influenza mitigation efforts in other locations. Therefore, recent interstate travel for work may be highly relevant to an investigation for avian influenza.

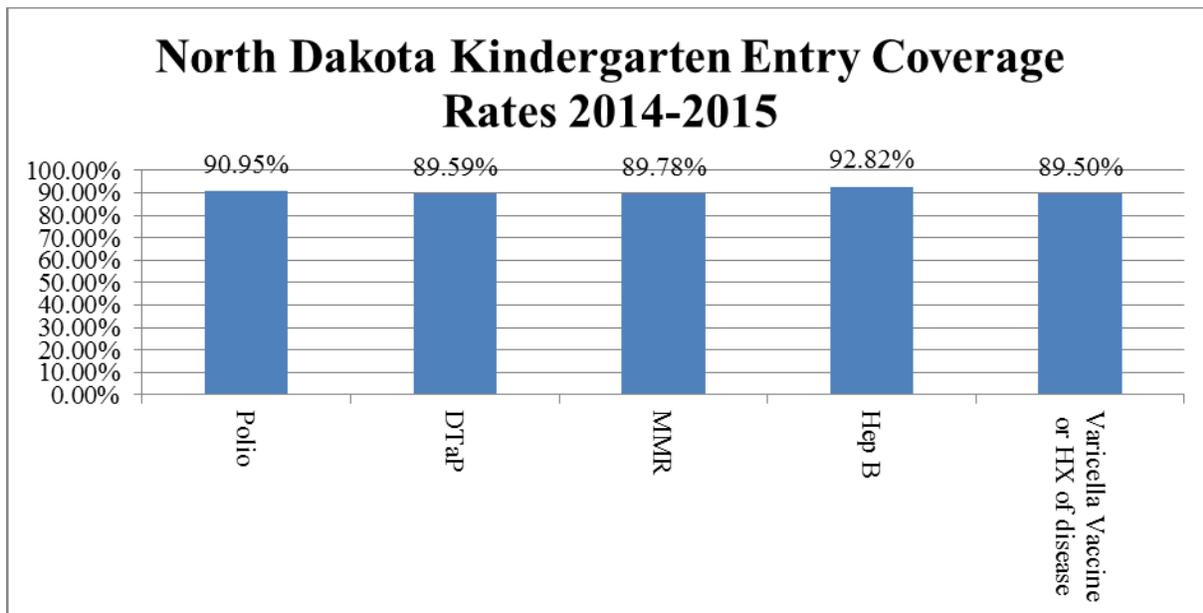
The NDDoH Division of Laboratory Services is the only lab that can test for avian influenza H5 viruses in North Dakota. Commercial tests are not designed to detect these strain, and positive or negative rapid, DFA, or commercial rt-PCR tests SHOULD NOT be a factor used in diagnosing potential avian influenza in a patient presenting in a clinical setting. Any potential animal strain of influenza in a human is considered “novel” influenza, and is immediately reportable to the NDDoH Division of Disease Control via telephone at 701.328.2378 (866.637.9769 in-state toll free) and 701.220.0819 after hours or on weekends. The identification of novel influenza in humans is of utmost importance. Although most humans sick with avian influenza do not transmit the virus readily, mutations could result in a virus which may be more severe in a human population because humans would lack prior immunity to the new virus.



School Immunization Rates

Certain immunizations are required for students to attend school in North Dakota. Children entering elementary school must have five doses of DTaP (diphtheria, tetanus and a cellular pertussis), four doses of IPV (polio), three doses of hepatitis B, two doses of MMR (measles, mumps and rubella), and two doses of varicella (chickenpox) vaccine. Seventh grade entry requirements include an immunization against tetanus, diphtheria and pertussis (Tdap) and meningococcal disease.

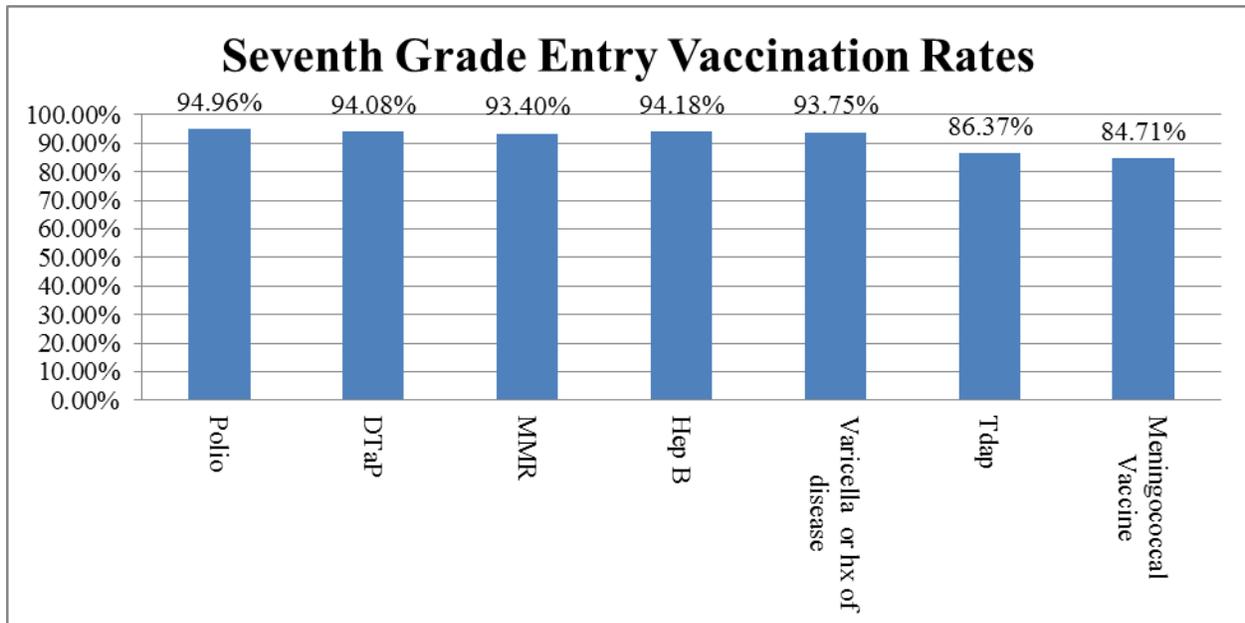
The finalized immunization coverage rates for kindergarten entry in North Dakota for the 2014-2015 school year can be seen below.



Exemptions for kindergarten entry for the 2014-2015 school year totaled 2.68%, compared with 2.7% for the 2013-2014 school year. Seventh grade coverage rates for the 2014-2015 school

year can be seen below. Exemptions for seventh grade entry in the 2014-2015 school year totaled 2.63% compared with 2.11% for the 2013-2014 school year.

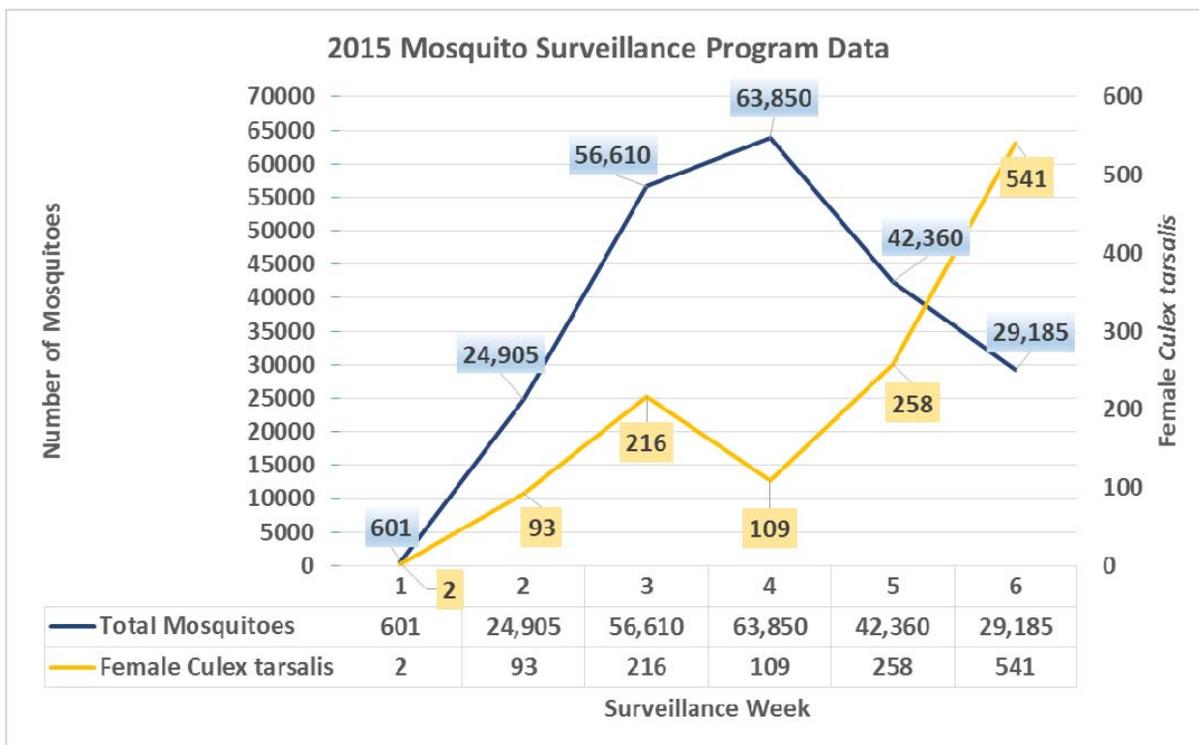
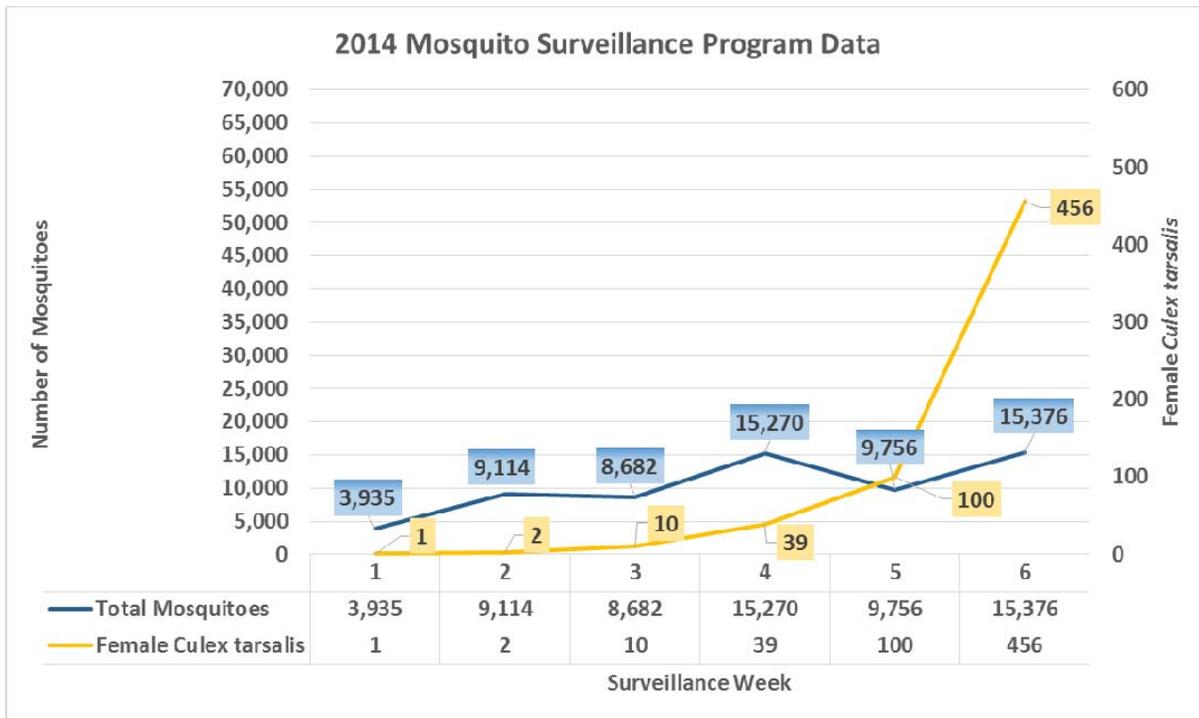
County-specific data is available on our website at www.ndhealth.gov/immunize/rates.



Mosquito Surveillance

The North Dakota Mosquito Surveillance Program’s mission is to monitor the risk of infection with arboviral encephalitis through mosquito collection. A network of nearly one hundred New Jersey mosquito traps located throughout the state capture mosquitoes, which are submitted weekly to the NDDoH’s Division of Laboratory Services for counting and identification by species. The mosquito population data gleaned from the network is used to determine the threat of mosquito-borne diseases in different regions of the state, as certain species of mosquitoes are more likely to acquire and transmit viral encephalitis than others. All members of the genus *Culex* are competent vectors of Saint Louis encephalitis, Western equine encephalitis, Eastern equine encephalitis, and West Nile virus (WNV). The NDDoH surveillance program pays particularly close attention to *Culex tarsalis*, the primary vector of WNV in North Dakota.

As shown by the graphs below (which have the same range for their axis scales), the total number of mosquitoes caught in the program’s traps this year are considerably higher than last year’s counts. We also noted an earlier increase in the population of female *Culex tarsalis* this year as compared to previous years.



There could be many reasons why there has been such a marked increase in the mosquito population. Environmental factors can greatly impact mosquitoes. Increased rainfall is particularly important, especially for transient water mosquitoes, which prefer to lay their eggs in temporary pools of standing water. *Culex tarsalis* belongs in this category of mosquitoes.

Higher ambient temperatures affect mosquitoes because warmer air results in warmer water. Warmer water temperatures speed up the life cycle of a mosquito by shortening the length of time it takes for eggs to hatch and larvae to develop. Studies on the transmission of West Nile virus have shown that warmer air temperatures also result in a shorter incubation period between infection and infectiousness in mosquitoes.

Weather conditions also affect the feeding habits of adult mosquitoes. Mosquitoes are most active between the hours of dusk and dawn, when wind speeds are low and the temperature is moderate. Strong winds, heavy rainfall, and very hot or cold temperatures decrease the activity of mosquitoes.

For more information on the Mosquito Surveillance Program or West Nile virus, please call the NDDoH Division of Disease Control at 701.328.2378 or 800.472.2180 or visit www.ndhealth.gov/wnv/.



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