

# North Dakota 2015-16 Influenza Season Final Report

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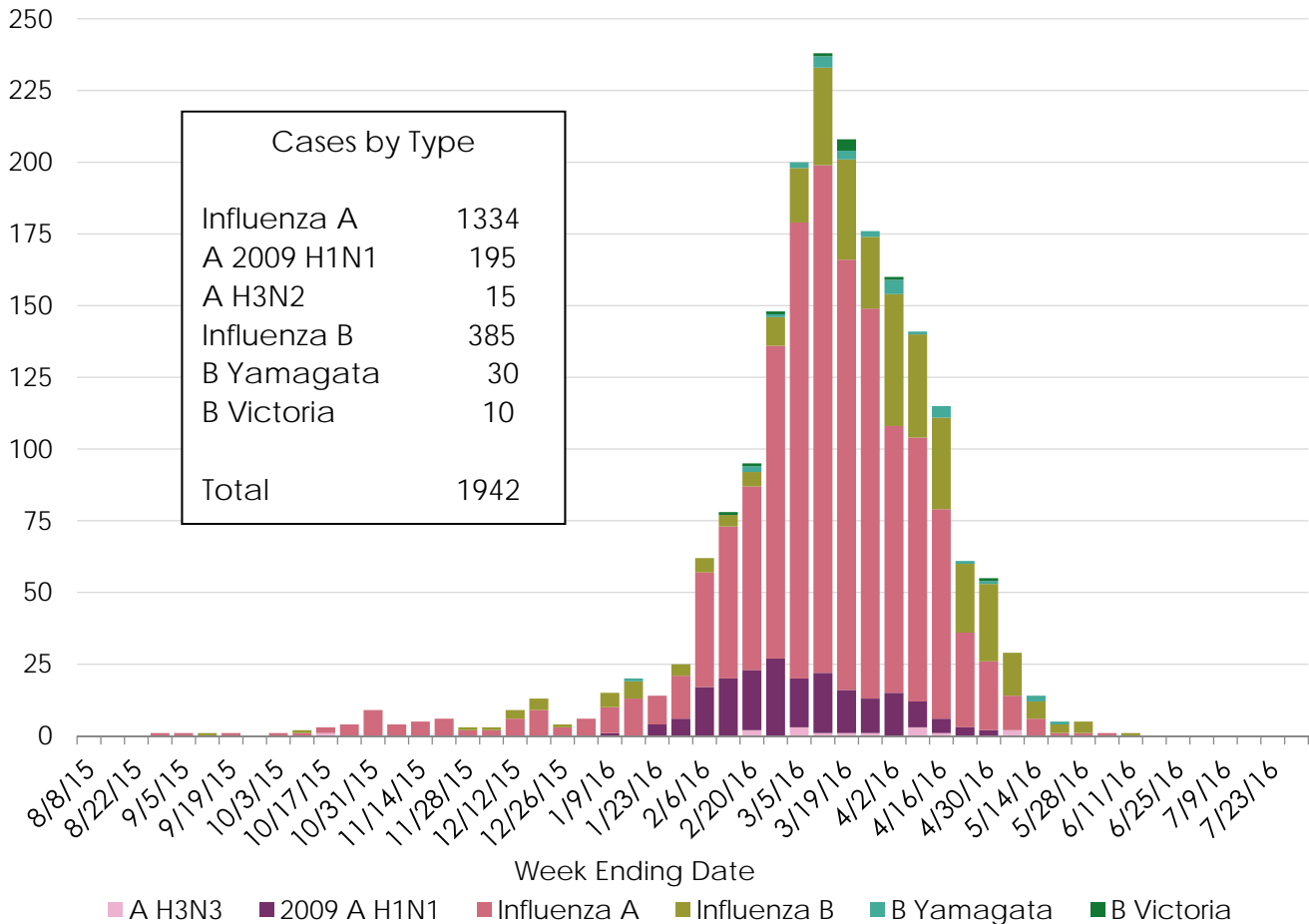
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## Summary

The North Dakota Department of Health (NDDoH) received reports of 1,942 cases of laboratory-identified influenza, making the 2015-16 influenza season a fairly mild season overall. This statistic captures cases that are identified with a laboratory test; cases diagnosed based on symptomology or contact with another known case are required to be reported. Additionally, not all people with influenza will seek the care of a medical professional. Therefore, the true seasonal burden of influenza is higher than presented in this report.

The predominant strain this season was the 2009 A H1N1 pandemic strain. This strain last predominated during the 2013-14 influenza season. As usual, influenza A H3N2 circulated as well, in much lower numbers. There were also a total of 425 cases of influenza B reported. A higher percentage of B was reported in the latter half of the season, which is typical. Of the known B viruses that underwent lineage testing, 75% were of the Yamagata lineage, while the remaining 25% were of the Victoria lineage. In recent years, Yamagata has been more prevalent in the Midwest region of the United States. The 2015-16 trivalent vaccine, which includes antigen for protection against only one B lineage, included protection against B Yamagata. For more information on influenza statistics, visit [www.ndflu.com](http://www.ndflu.com).

**Number of Laboratory-Identified Influenza Cases Reported by Week, North Dakota 2015-16 Season**

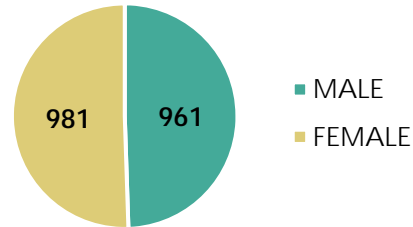


## Demographics

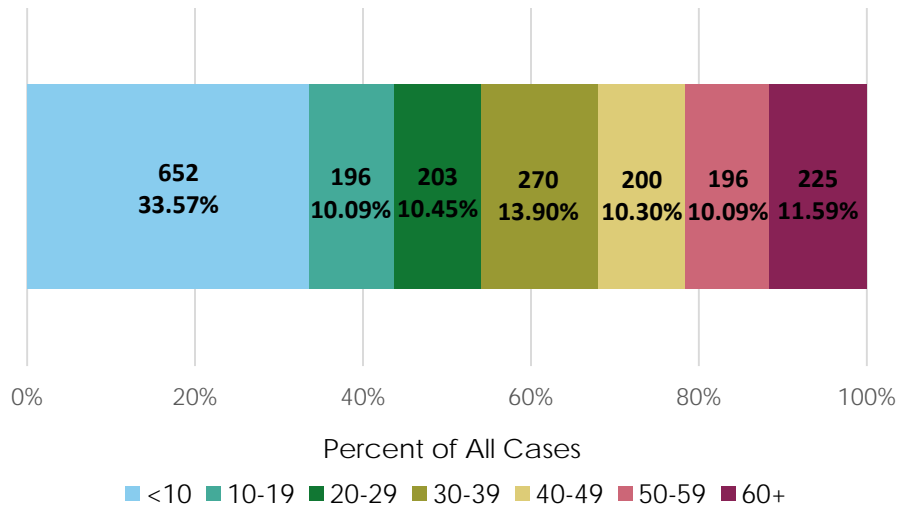
County	Case Count
Adams	7
Barnes	13
Benson	10
Billings	0
Bottineau	3
Bowman	27
Burke	2
Burleigh	280
Cass	414
Cavalier	43
Dickey	26
Divide	9
Dunn	19
Eddy	2
Emmons	7
Foster	1
Golden Valley	7
Grand Forks	120
Grant	5
Griggs	0
Hettinger	2
Kidder	5
Lamoure	22
Logan	18
McHenry	6
McIntosh	6
McKenzie	17
McLean	18
Mercer	80
Morton	106
Mountrail	17
Nelson	3
Oliver	16
Pembina	8
Peirce	2
Ramsey	32
Ransom	24
Renville	4
Richland	23
Rolette	8
Sargent	16
Sheridan	3
Sioux	34
Slope	0
Stark	99
Steele	0
Towner	1
Traill	24
Walsh	40
Ward	194
Wells	1
Williams	92

Influenza cases were reported throughout North Dakota. The 2009 A H1N1 pandemic strain disproportionately affects younger-aged children and adults. The elderly are considerably less affected compared with the A H3N2 strain.

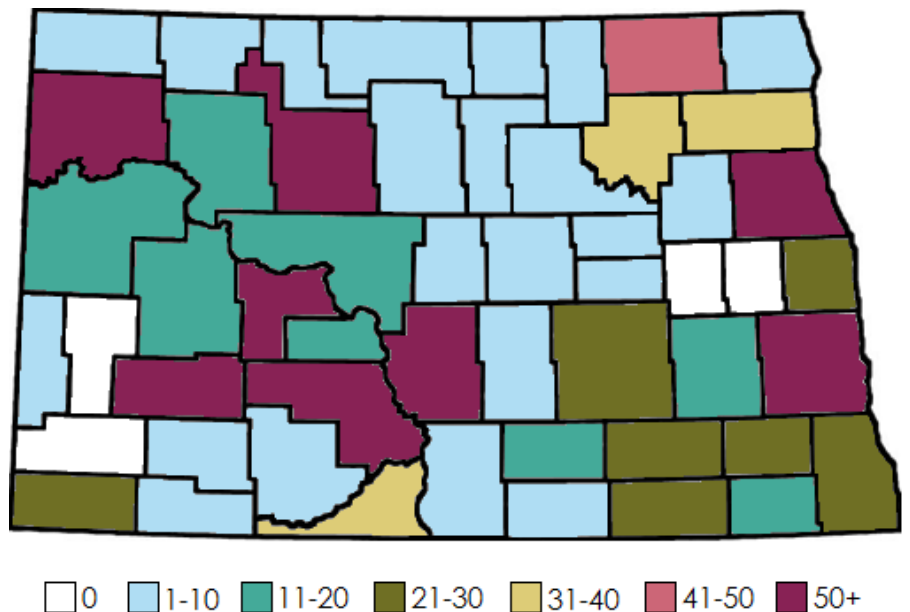
Case Count by Gender



Case Count by Age Group



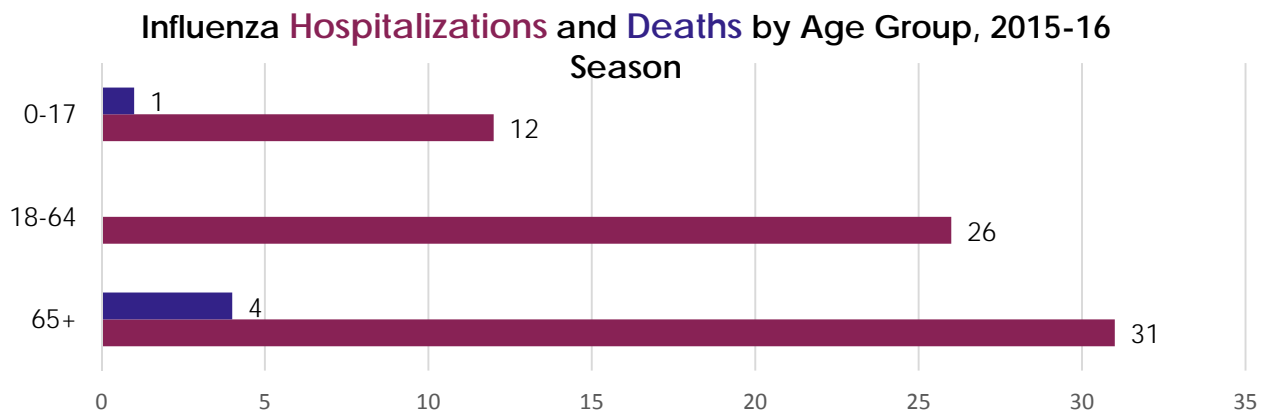
Case Burden by County



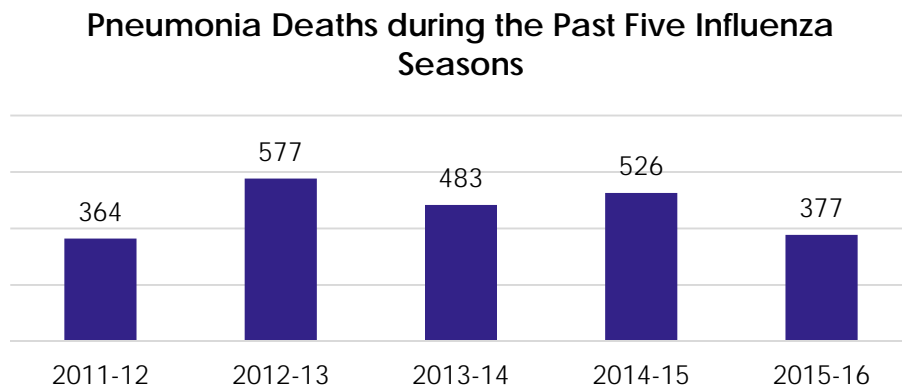
## Hospitalizations and Deaths

The NDDoH received reports of 69 hospitalizations. Many providers now report cases electronically, and electronic laboratory data does not include hospitalization status. Therefore, the NDDoH's ability to report accurate hospitalization data has declined considerably, although some hospitals still report their hospitalizations separately. For this reason, hospitalization rates for the 2015-16 season are not comparable to rates from previous seasons. The reporting of influenza hospitalizations is not mandatory in North Dakota.

The NDDoH continues to receive information on influenza deaths from Vital Records, as well as ad hoc reports from providers. For the 2015-16 influenza season, five deaths were reported in North Dakota. Although influenza deaths are not a reportable condition, pediatric influenza-related deaths are nationally notifiable. This season, one pediatric death was identified. This is the first pediatric death since the 2010-11 season identified in North Dakota. The patient was a school-aged child with underlying health conditions and multiple co-morbidities.

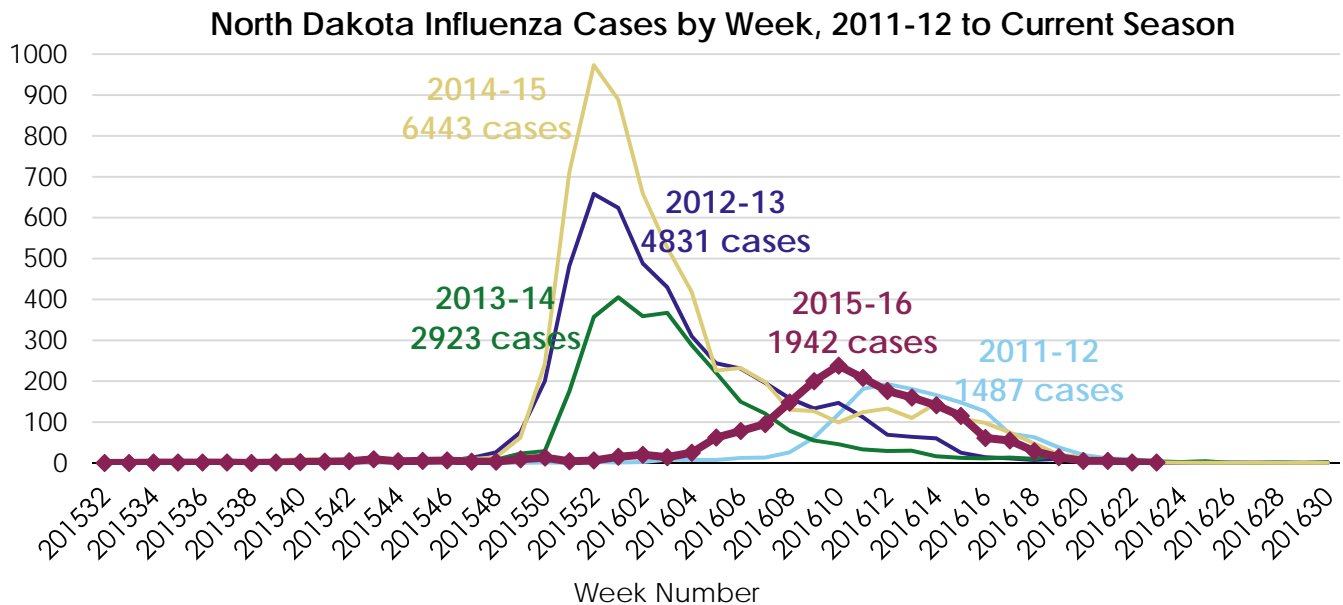


In addition, 377 pneumonia deaths were identified in the death record. The NDDoH tracks pneumonia deaths because influenza respiratory disease generally contributes significantly to the number of deaths due to pneumonia during the influenza season. Because influenza is not always diagnosed with a laboratory test, tracking pneumonia deaths is another way to illustrate the magnitude of the influenza season. As expected, fewer pneumonia deaths occurred during this more mild influenza season than the previous three years.



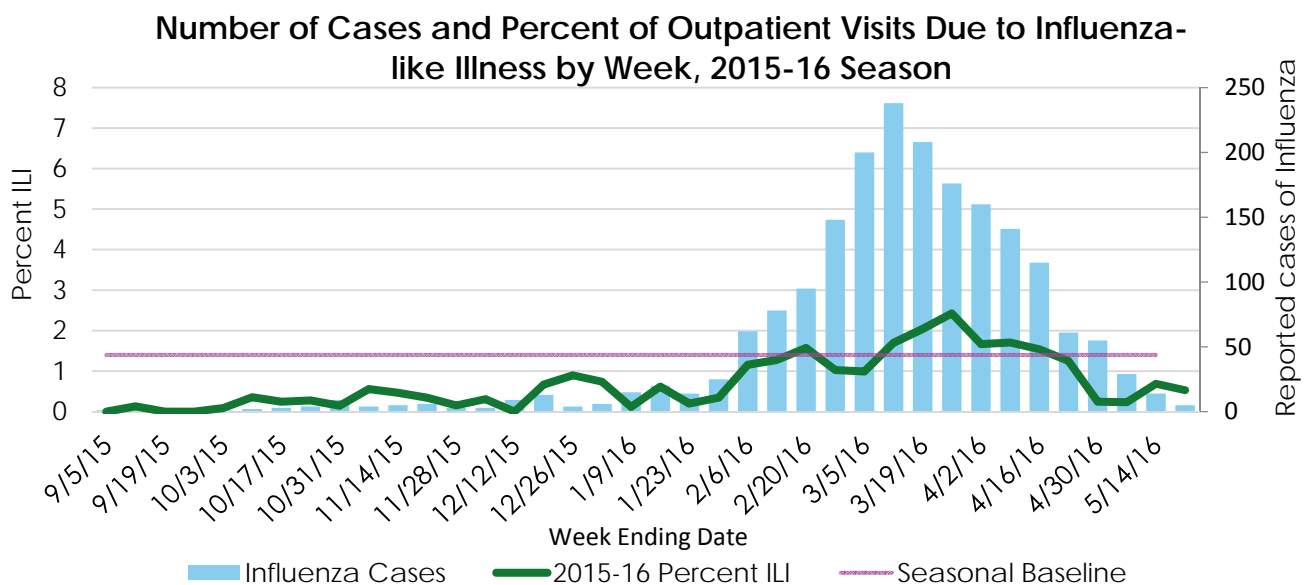
## Seasonal Timing and Multi-season Comparison

The 2015-16 influenza season peaked the week ending March 12, 2016 (week 10). This peak was much different than the previous three seasons, which peaked early, around the beginning of the New Year. The number of cases reported for 2015-16 was markedly different from the previous season. The 2014-15 season saw the highest number of reported cases on record, and the predominant circulating strain was an A H3N2 that was drifted from the vaccine strain.



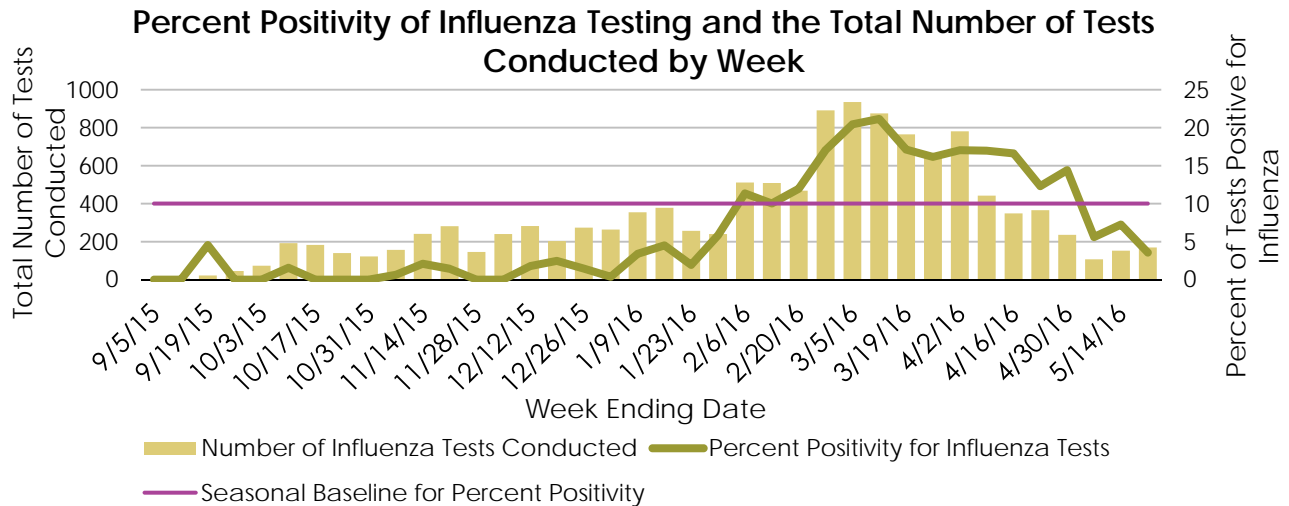
## Outpatient Influenza-like Illness Network (ILINet)

Eleven individual health care providers or clinics located throughout the state submitted influenza-like illness (ILI) data to the NDDoH as part of the national ILINet sentinel provider program. ILI is defined as having a fever accompanied by a cough and/or sore throat. Percent ILI peaked the 12th week of 2016, the week ending March 26<sup>th</sup>, with 2.43 percent of visits due to ILI. The seasonal threshold for ILI in North Dakota is 1.4 percent; for the 2015-16 season this threshold was first exceeded the week ending February 20<sup>th</sup>, 2016.



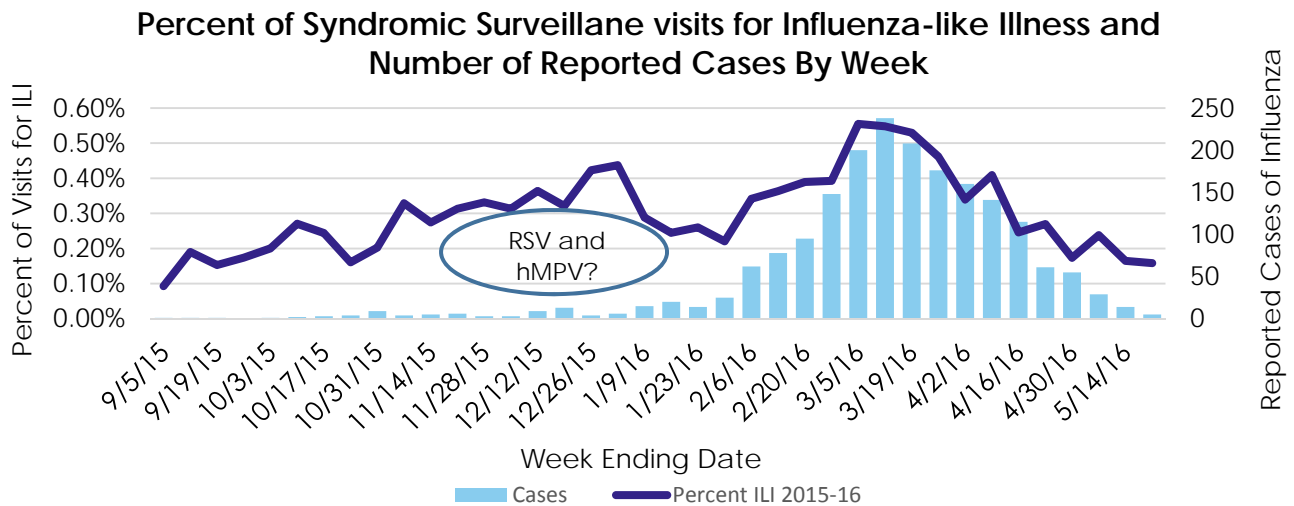
## Laboratory Surveillance

Twenty-four laboratories in North Dakota participated in the laboratory sentinel program for the season, submitting the total number of influenza tests conducted and the total number of positive results. Tests include rapid, DFA, culture, and RT-PCR methodology. Seasonal influenza activity is generally considered 10 percent or greater percent positivity. Percent positivity for the 2015-16 season was above 10 percent for 13 weeks, beginning the week ending February 6<sup>th</sup>. The highest percent positivity was 21.14 percent, the week ending March 12<sup>th</sup>, 2016.



## Syndromic Surveillance ILI

Syndromic surveillance is the use of chief complaint, diagnosis and/or other “reason for visit” data used to track trends in different categories of diseases (“syndromes”). Various North Dakota hospitals and clinics provided syndromic surveillance data to North Dakota’s BioSense 2.0 platform during the 2015-16 influenza season. The highest recorded ILI occurred the 9<sup>th</sup> and 10<sup>th</sup> week in 2016, the weeks ending March 5<sup>th</sup> and March 12<sup>th</sup>, when 0.55 percent of visits were for influenza-like illness. High levels of RSV and human metapneumovirus around that time likely caused elevated syndromic ILI earlier in the season.

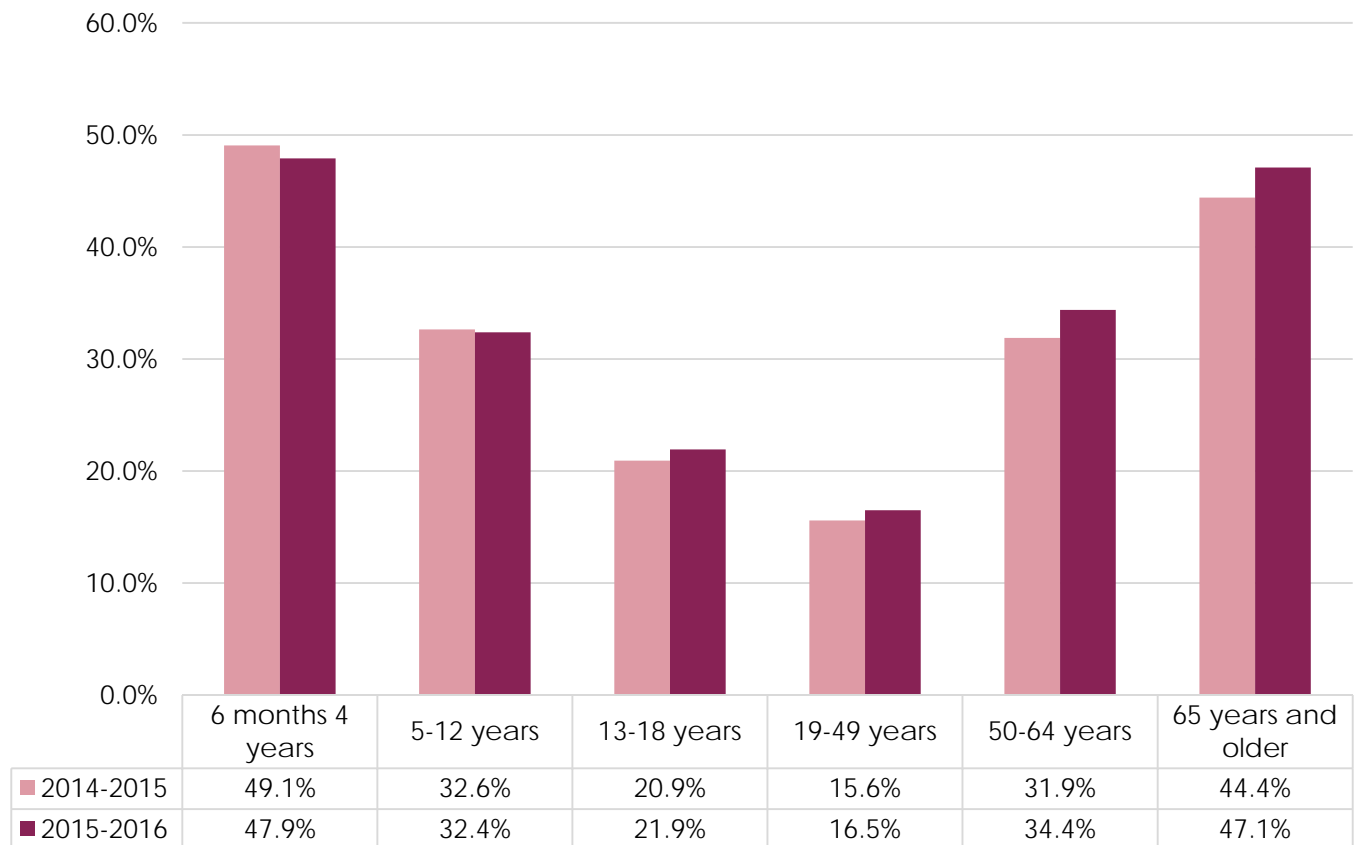


## Vaccination

The North Dakota Immunization Information System (NDIIS) collects data on vaccinations administered to North Dakotans. Vaccines given to children are required to be entered into the NDIIS, while vaccines given to adults are often entered into the NDIIS, but are not required to be entered. Many providers in North Dakota have established an electronic connection with the NDIIS, allowing all vaccinations for that provider to be sent to the NDIIS automatically.

Vaccination rates for 2015-16 were similar to 2014-15, with rates appearing to increase slightly in all age groups except children 12 and younger. One possible reason for this increase is that it reflects an increase in reporting to the NDIIS, as more clinics and facilities become interoperable and begin sending adult vaccine doses.

**Percent of ND Residents Receiving at Least One Dose of Influenza Vaccine, 2014-15 and 2015-16**



National influenza vaccination rates are estimated using data from the National Immunization Survey (NIS) and the Behavioral Risk Factor Surveillance System (BRFSS). Estimations using this data are also created for individual states. In recent years, overall vaccination rates in North Dakota have been about three percent above the national average.

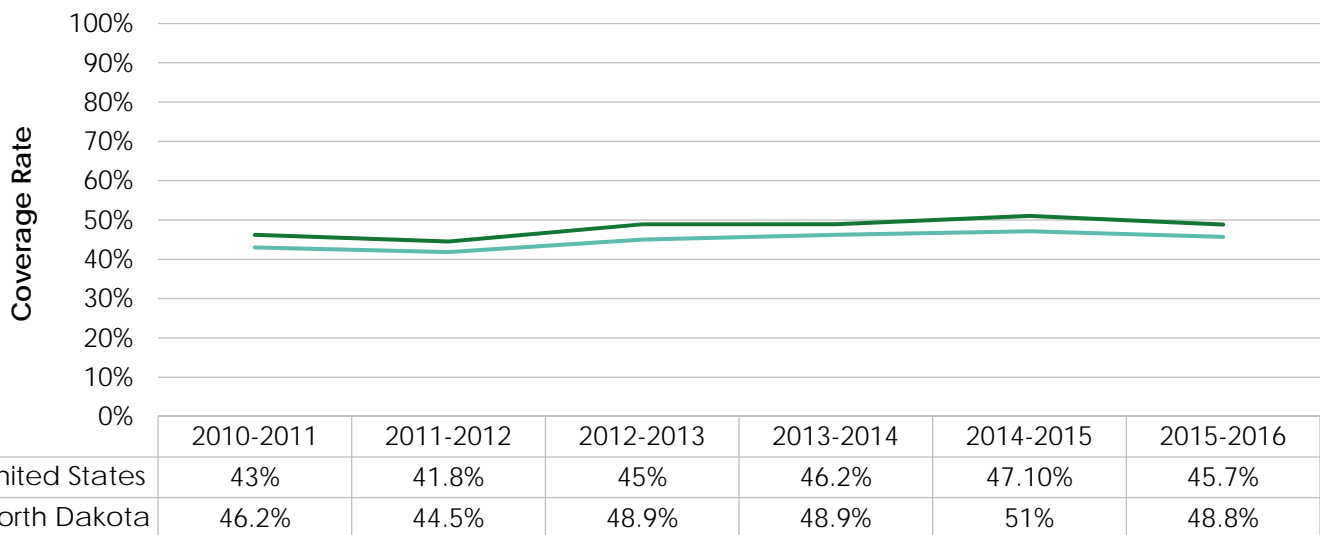
Vaccination rates for health care workers are tracked because health care workers routinely have contact with patients at high risk for developing complications from influenza. For healthcare workers, the Centers for Disease Control and Prevention (CDC) estimates that



90.1 percent of North Dakota health care workers were vaccinated against influenza for the 2015-16 season, compared with 84.5 percent of health care workers during the 2014-15 season.

For pregnant woman, the CDC estimates that 49.9 percent of pregnant women were vaccinated (at the national level) compared with 50.3 percent for the 2014-15 season. North Dakota influenza vaccination coverage data is not available for pregnant women. Pregnant women are at special risk for influenza complications. In addition to protecting the mother, vaccination during pregnancy can also provide protection to infants in their first month of life. Studies consistently suggest that when the recommendation and availability of influenza vaccination during pregnancy comes directly from a woman’s obstetrician or other obstetric provider, the odds of vaccine acceptance and receipt are 5-fold to 50-fold higher.

**Influenza Vaccination Coverage Estimates for North Dakota and the United States from the National Immunization Survey (NIS) and Behavioral Risk Factor Surveillance System (BRFSS), 2010-11 through 2015-2016  
Influenza Seasons, All Ages**



Nationally, influenza vaccination rates decreased slightly for the 2015-16 season. This may be due in part to a poor vaccine match for the 2014-15 season; people may have been less likely to get vaccinated in 2015-16 because of the perception that the vaccine didn’t work very well. It is also possible vaccination behaviors for 2015-16 were influenced by the fact that it was a late, mild season. Although not recommended, some people end up waiting until influenza is circulating before getting vaccinated. Vaccination remains the best way to fight the spread of influenza.