

April-May-June 2008

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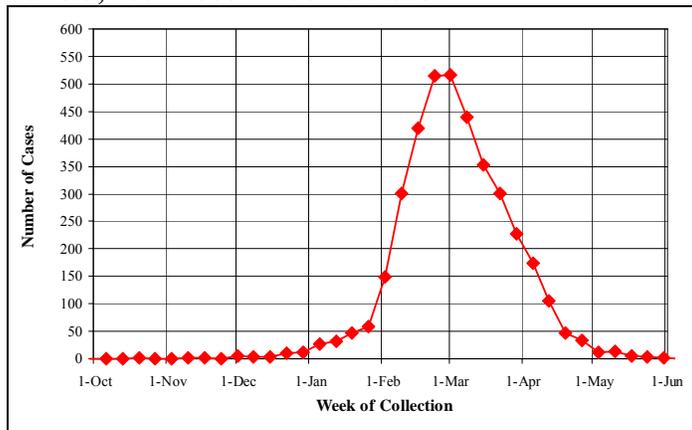
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2007-2008 Influenza Summary

Influenza surveillance activities resumed for the 2007-2008 season in October 2007. The North Dakota Department of Health (NDDoH) uses laboratory-identified influenza cases to track influenza activity in the state. In addition, the NDDoH has an influenza sentinel surveillance program consisting of 11 sentinel providers, nine emergency rooms, one ask-a-nurse call center, 28 laboratories and 13 schools contributing data that is used to actively monitor influenza illness.

Influenza activity in the state remained sporadic until the beginning of January 2008 and reached peak activity the week ending March 1, 2008 (Figure 1). During the 2007-2008 influenza season, a total of 3,817 influenza cases were identified via viral culture, DFA, IFA or rapid test.

Figure 1. Number of reported influenza cases, North Dakota, 2007-2008 influenza season



The largest number of positive cases was reported in the 25- to 34-year-old age range (550). Those ages 19 and younger comprised 42 percent of the total cases reported during the 2007-2008 influenza season.

Similar to the last influenza season, type A was the predominant type identified during the 2007-2008 flu season, with 65 percent of the cases being type A (2,500). The Division of Laboratory Services sub-typed 36 influenza isolates, with 14 identified as type A-H1 and three identified as type A-H3 (19 type B). Figure 2 summarizes the 2007-2008 influenza cases by age group and type.

Figure 2. Influenza cases by age group and type, North Dakota, 2007-2008 influenza season

		TYPE			Total
		A	B	Unspecified	
AGE GROUP	<1	72	17	3	92
	1-5	376	154	8	538
	6-10	283	164	12	459
	11-19	438	78	15	531
	20-24	251	31	2	284
	25-34	361	176	13	550
	35-44	211	170	7	388
	45-54	229	187	10	426
	55-64	117	131	10	258
65+	162	119	10	291	
Total		2500	1227	90	

As part of the National Notifiable Diseases Surveillance System (NNDSS), the state health department conducts surveillance for influenza-associated pediatric deaths. During the 2007-2008 influenza season, no influenza-associated deaths among children were identified in the state.

A total of 52 out of the 53 counties in the state reported laboratory-identified influenza infection during the 2007-2008 season. In North Dakota, the influenza season typically runs from October through May.

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Table 1. Number of influenza cases by county, North Dakota, 2007-2008 influenza season

COUNTY	CASES	COUNTY	CASES
Adams	9	McLean	99
Barnes	55	Mercer	149
Benson	22	Morton	229
Billings	0	Mountrail	26
Bottineau	4	Nelson	11
Bowman	24	Oliver	15
Burke	4	Pembina	93
Burleigh	653	Pierce	3
Cass	750	Ramsey	17
Cavalier	68	Ransom	44
Dickey	74	Renville	3
Divide	4	Richland	84
Dunn	9	Rolette	13
Eddy	7	Sargent	50
Emmons	22	Sheridan	5
Foster	6	Sioux	30
Golden Valley	2	Slope	2
Grand Forks	212	Stark	167
Grant	13	Steele	16
Griggs	11	Stutsman	201
Hettinger	5	Towner	8
Kidder	12	Traill	107
La Moure	31	Walsh	52
Logan	16	Ward	178
McHenry	14	Wells	22
McIntosh	14	Williams	92
McKenzie	60		

A mismatch between the influenza vaccine and the circulating influenza strains occurred during the 2007-2008 influenza season. The WHO and FDA have recommended changes to all three strains of the 2008-2009 influenza vaccine composition. Also new for the 2008-2009 influenza season is the CDC advisory committee's recommendation that children ages 6 months through 18 years receive influenza vaccination. This recommendation is an expansion of last year's recommendation to include children ages 5 years through 18 years.

Bird Flu – What Is North Dakota Doing?

In 2005, the North Dakota Department of Health, North Dakota Game and Fish, USDA Wildlife Services, USDA – APHIS, State Board of Animal Health, U.S. Fish and Wildlife, North Dakota Turkey Growers Association, North Dakota Zoos, Department of Emergency Services and the NDSU Veterinary Diagnostic Laboratory formed an intra-agency work group to develop the state's avian influenza response plan.

In the fall of 2006, three agencies set up surveillance activities to look for H5N1. These surveillance activities continued through 2007. A summary of their activities is listed below:



North Dakota Game and Fish

The North Dakota Game and Fish Department entered a cooperative agreement with USDA Wildlife Services to conduct surveillance for highly pathogenic H5N1 avian influenza in wild birds in North Dakota during 2007. The goal was to collect 750 samples from waterfowl throughout the state. It was decided that about 550 samples were to come from dabbling ducks and 200 were to come from diving ducks. Surveillance efforts began with sampling of waterfowl captured during banding efforts and was completed with sampling of hunter-harvested waterfowl.

In collaboration with the Central Flyway Council and Ducks Unlimited, banding efforts and sample collection occurred at Audubon and Lake Ilo. Sampling began in August and by the end of September, a total of 313 bird samples (261 dabbling ducks, 50 divers, and two opportunistic species) were collected.

Two seasonal employees were hired to conduct hunter-harvested surveillance. The goal was to sample about 445 hunter-harvested birds, consisting of 250 dabbling ducks and 145 diving ducks. Hunter-harvested sampling began on September 22 and was completed October 21. A total of 444 hunter-harvested birds were sampled, including 287 dabbling ducks, 155 diving ducks, and two opportunistic species.

A total of 757 birds were sampled (548 dabbling ducks, 205 diving ducks and four opportunistic species) and no highly pathogenic H5N1 was found.



The USDA/APHIS/Wildlife Services program, in cooperation with the North Dakota Game and Fish Department and the U.S. Fish and Wildlife Service, began its avian influenza surveillance in August 2007. Two seasonal employees were hired to collect environmental (fecal) samples and samples from both live birds and hunter-harvested birds. Sampling concluded in December 2007.

Wildlife Services collected 877 environmental samples, slightly higher than its target goal of 850 samples. Analysis of the samples was conducted at Wildlife Services' National Wildlife Research Center located in Ft. Collins, Colo.

Wildlife Services also collected samples from 767 live birds and hunter-harvested birds, slightly higher than its target goal of 750 birds. The samples were collected from 17 different species of waterfowl. Analysis of the birds samples was conducted by the North Dakota State University Diagnostics Laboratory.

No highly pathogenic H5N1 avian influenza was identified.



State Board of Animal Health

The Avian Influenza (AI) testing program, which began in the spring of 2006, is continuing to provide AI surveillance for North Dakota in order to monitor the health of our birds.

During 2007, about 862 birds were sampled and surveyed and 1,724 tests were completed. All test results were negative for highly pathogenic H5N1.

Since the program began in 2006, a total of 2,357 birds have been sampled and surveyed.

Bird owners participating in this program are compensated up to \$5 per bird (maximum 20 birds per visit), as funding is available. Testing is

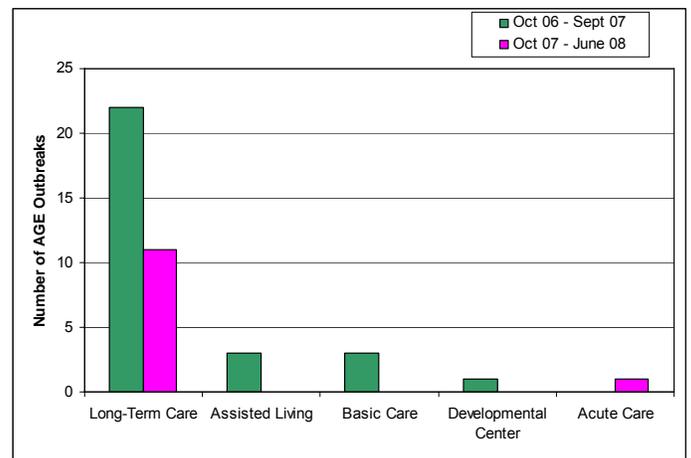
conducted via tracheal swab, which causes minimal stress to the bird and is not harmful to the animal. Poultry owners wishing to participate are encouraged to contact Jeanne Beitelspacher, AI coordinator for North Dakota, at 701.220.0151 or the North Dakota Board of Animal Health at 701.328.2655 to schedule on-site testing.

All three agencies will continue similar avian influenza surveillance activities in 2008.

Acute Viral Gastroenteritis

Between October 2007 and June 2008, 12 acute viral gastroenteritis (AGE) outbreaks were reported to the NDDoH among health-care settings in eight counties, including Burleigh, Cass, Grand Forks, McLean, Pierce, Stark, Stutsman and Ward. The majority of AGE outbreaks in 2007/2008 occurred in long-term care facilities. The number of AGE outbreaks in 2007/2008 was almost 50 percent less than the number of AGE outbreaks reported in 2006/2007. (Figure 3)

Figure 3. Number of AGE outbreaks reported from health-care settings in North Dakota, Oct. 1, 2006, to June 30, 2008.

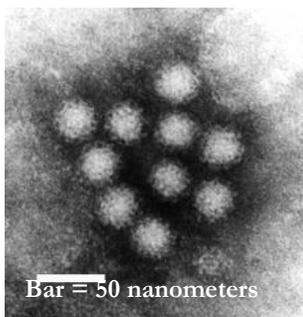
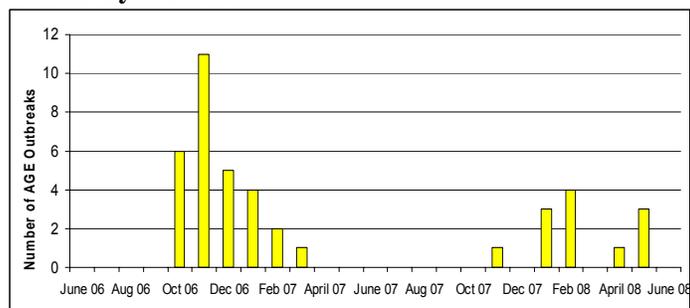


A viral gastroenteritis outbreak is defined as two or more people associated with a common venue having acute vomiting and/or diarrhea lasting 24 to 48 hours. In 2007/2008, more than 380 residents and 390 staff were ill at the time the outbreaks were reported. Six out of 15 total stool specimens collected from six facilities reporting outbreaks tested positive for norovirus.

Outbreaks of gastroenteritis in long-term care facilities are not uncommon, occurring most often

during the winter and early spring. More than half of the AGE outbreaks as of October 2007 have occurred in January and February. The majority of outbreaks between October 2006 and September 2007 were reported in October and November. The number of AGE outbreaks between October 2007 and June 2008 has decreased by more than 50 percent compared with the previous year. Between October 2006 and September 2007, there were 29 AGE outbreaks reported to the NDDoH among health-care settings in 20 counties. **(Figure 4)** Two predominant viral strains circulating in 2006/2007 were primarily responsible for the large amount of outbreaks that occurred that season. More data is needed to establish a baseline of AGE outbreaks occurring at health-care settings and to establish the predominant seasonal trend in North Dakota.

Figure 4. Number of AGE outbreaks reported in North Dakota by month.



Noroviruses are the most common cause of viral gastroenteritis outbreaks and is often called the “winter vomiting disease” or “stomach flu.” Although it is commonly referred to as the stomach flu, it has no relationship to the influenza

virus that causes respiratory infections. The CDC estimates noroviruses cause 23 million cases of acute gastroenteritis each year and about 50 percent of all foodborne outbreaks. Hand washing, staying home when ill and cleaning environmental surfaces are important in preventing norovirus infections.

Prevention and control of norovirus outbreaks may be challenging, as the agent is resistant to common disinfectants, offers no long-lasting immunity and is highly contagious. According to the CDC MMWR publication *Norovirus Activity—United States, 2006-2007* (Aug. 24, 2007), control of norovirus outbreaks depends on consistent enforcement of measures such

as strict hand hygiene and use of effective environmental disinfectants listed in Box 1.

Box 1. Recommended measures for the prevention and control of norovirus infection.

- ✔ Practice good hand hygiene. Wash hands frequently with soap and water. Alcohol-based sanitizing hand gels ($\geq 62\%$ ethanol content) may be used to complement hand washing.
 - ✔ Disinfect contaminated surfaces with either of the following methods:
 - ❑ Use a chlorine bleach solution with a concentration of 1,000 – 5,000 ppm (1:50-1:10 dilution of household bleach [5.25%]) for hard, nonporous surfaces.
 - ❑ Use disinfectants registered as effective against norovirus by the Environmental Protection Agency (EPA)* in accordance with the manufacturers’ instructions.
 - ✔ Do not return to work or school until 24 to 72 hours after symptoms resolve.
 - ✔ Additional measures for outbreaks in health-care and long-term-care facilities include the following:
 - ❑ Use contact precautions for preventing gastroenteritis.
 - ❑ Avoid sharing staff members between units or facilities with affected patients and units or facilities that are not affected.
 - ❑ Group symptomatic patients and provide separate toilet facilities for ill and well people.
 - ❑ Instruct visitors about appropriate hand hygiene and monitor compliance with contact isolation precautions.
 - ❑ Close affected units to new admissions and transfers.
- *List of EPA-approved products available at www.epa.gov/oppad001/list_g_norovirus.pdf

Source: www.cdc.gov/mmwr/preview/mmwrhtml/mm5633a2.htm

For more information about prevention of viral gastroenteritis or to report an outbreak, visit www.ndhealth.gov/disease/GI/norovirus.aspx or call Disease Control at 800.472.2180.

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Summary of Selected Reportable Conditions				
North Dakota, 2007-2008				
Reportable Condition	April-June 2008*	January-June 2008*	April-June 2007	January-June 2007
Campylobacteriosis	26	42	42	53
Chlamydia	444	935	416	848
Cryptosporidiosis	2	3	12	14
<i>E. coli</i> , shiga toxin positive (non-O157)	0	1	0	4
<i>E. coli</i> O157:H7	1	3	1	3
Enterococcus, Vancomycin-resistant (VRE)	32	99	58	138
Giardiasis	4	13	13	19
Gonorrhea	26	60	32	53
Haemophilus influenzae (invasive)	2	8	1	2
Hantavirus	0	0	0	0
Acute Hepatitis A	0	0	1	2
Acute Hepatitis B	1	1	1	2
Acute Hepatitis C	0	0	0	0
HIV/AIDS ¹	5	12	6	12
Legionellosis	0	1	2	2
Listeria	0	0	0	0
Lyme Disease	6	7	3	3
Malaria	0	0	1	1
Meningitis, bacterial ² (non meningococcal)	2	4	0	2
Meningococcal disease ³	2	3	1	2
Mumps	0	2	2	3
Pertussis	0	1	1	7
Rabies (animal)	5	13	8	15
Salmonellosis	19	32	18	30
Shigellosis	10	35	0	6
Staphylococcus aureus, Methicillin-resistant (MRSA)	19	32	29	361
Streptococcal disease, Group A ⁴ (invasive)	3	9	4	15
Streptococcal disease, Group B ⁴ (infant < 3 months of age)	1	2	2	3
Streptococcal disease, Group B ⁴ (invasive ⁵)	18	23	9	13
Streptococcal pneumoniae ⁴ , (invasive, children < 5 years of age)	4	5	0	1
Streptococcal pneumoniae ⁴ (invasive ⁶)	21	44	23	40
Streptococcus pneumoniae ⁴ , drug-resistant	0	1	0	0
Syphilis, Primary and Secondary	0	0	0	1
Tuberculosis	1	1	0	1
Tularemia	0	0	0	0
West Nile Virus Infection	4	4	18	18

*Provisional data

¹ Includes newly diagnosed cases and cases diagnosed previously in other states that moved to North Dakota.

² Meningitis caused by *Staphylococcus aureus* and *Streptococcus pneumoniae*.

³ Includes confirmed, probable and suspect meningococcal meningitis cases.

⁴ Includes invasive infections caused by streptococcal disease not including those classified as meningitis.

⁵ Includes invasive infections of streptococcal, Group B, disease in persons \geq 3 months of age.

⁶ Includes invasive infections caused by *Streptococcus pneumoniae* in persons \geq 5 years of age.