



In this issue:

2013-2014

Influenza Summary... 1-2

2013-2014 AGE

Outbreak Summary.... 3

2013 Enteric

Summary.....4

Reportable Conditions

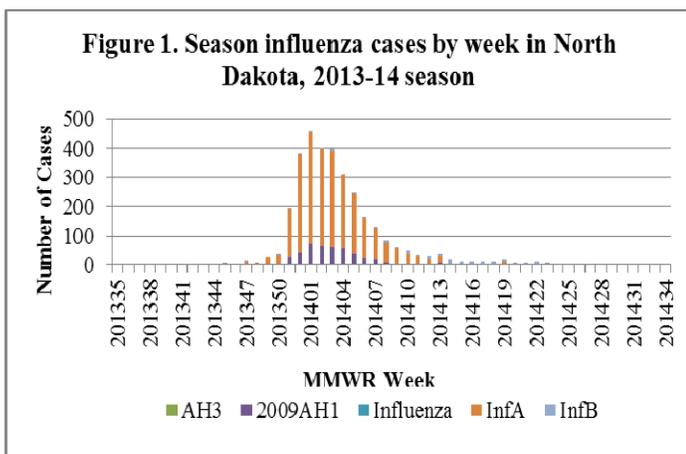
Summary.....7

Epidemiology *report*

2013–2014 Influenza Summary

by Jill Baber, Surveillance Epidemiologist

Influenza surveillance activities for the 2013-14 season officially started Sept. 1, 2013. The North Dakota Department of Health (NDDoH) requires that all laboratory-identified cases of influenza be individually reported to the NDDoH. During the 2013-14 influenza season, a total of 2,919 cases were identified via viral culture, DFA, IFA, PCR or rapid test. Overall, we saw fewer reported cases this year versus last year (4,833 cases). Peak activity was reached the week ending Jan. 4, 2014 (**Figure 1**). Similar to last season, this was a relatively early peak for the influenza season.



The largest number of positive cases was reported in the <10 age range (744, **Table 1**). The 2009 A H1N1 pandemic strain (2009 A H1N1) was overwhelmingly

the predominant influenza strain identified during the 2013-14 season. This is the first season since the 2009 pandemic that 2009 A H1N1 has been the predominant strain. In comparison with H3 strains, 2009 A H1N1 can disproportionately affect young and working-aged adults. This can be seen in a comparison between the current and last seasons, an H3 year (**Figure 2**). In addition to 2009 A H1N1 cases, a handful of A H3 and some influenza B were identified throughout the season, with more influenza B being reported in the second half.

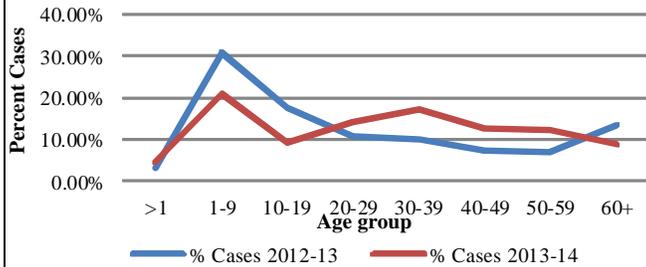
Ninety-five percent of cases were Influenza A (2,764). Of the influenza specimens that underwent PCR for subtyping, 452 were identified as type 2009 A H1N1, three identified as type A-H3 and 155 identified as type B. Influenza cases were reported in all but one of the 53 counties in North Dakota during the season, indicative of the wide geographical spread of influenza (**Table 2**).

Table 1. 2013-14 influenza cases by age group

AGE GROUP	CASES
<10	744
10-19	266
20-29	419
30-39	498
40-49	368
50-59	363
60+	261



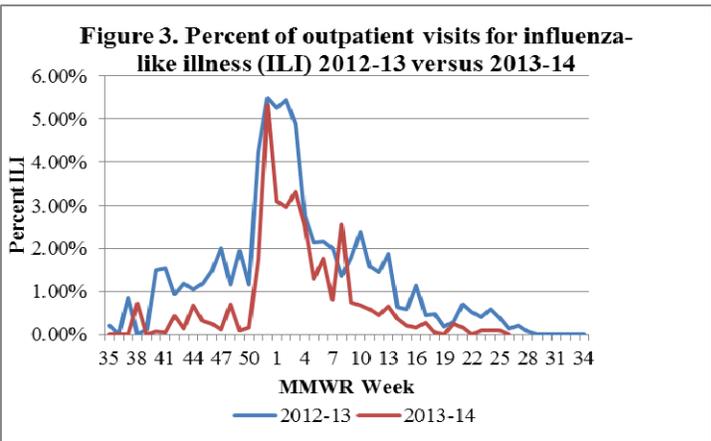
Figure 2. Percent of seasonal influenza cases by age group in North Dakota, 2012-13 versus 2013-14 seasons



associated deaths in children identified in North Dakota for the 2013-14 season. In 2012-13, none of the nine reported deaths fell into the under 60 age group.

Although a reportable disease in North Dakota, influenza is vastly underreported. Not everyone who develops influenza seeks care at a doctor’s office. Even when they do, physicians may rely on clinical diagnosis versus laboratory confirmation to diagnose influenza once the disease has been established in a community for the season. Because of this, NDDoH utilizes a variety of surveillance tools in addition to case reporting to help characterize influenza. Influenza-like illness reports from a program called ILINet are utilized by NDDoH to gauge the burden of influenza in the community using weekly data from sentinel sites around the state. ILINet providers report each week the number of patients they see that week meeting the clinical case definition for influenza versus the total number of patients seen. In **Figure 3**, the trend for the 2013-14 influenza season is compared with the previous influenza season, 2012-13. The 2012-13 season has a higher percentage of ILI during most of the season, which is expected because of the higher case count for that season. The overall pattern of ILI for the last two years has been similar. Timing for the influenza season can vary widely, and such similar patterns are not always expected.

Table 2. 2013-14 influenza cases by county			
COUNTY	CASES	COUNTY	CASES
Adams	21	McLean	50
Barnes	23	Mercer	74
Benson	18	Morton	159
Billings	2	Mountrail	44
Bottineau	18	Nelson	5
Bowman	22	Oliver	10
Burke	5	Pembina	37
Burleigh	548	Pierce	15
Cass	469	Ramsey	37
Cavalier	22	Ransom	9
Dickey	26	Renville	6
Divide	20	Richland	29
Dunn	19	Rolette	14
Eddy	4	Sargent	9
Emmons	10	Sheridan	4
Foster	5	Sioux	7
Golden Valley	3	Slope	0
Grand Forks	179	Stark	170
Grant	24	Steele	2
Griggs	2	Stutsman	27
Hettinger	9	Towner	11
Kidder	4	Traill	3
LaMoure	1	Walsh	49
Logan	36	Ward	407
McHenry	29	Wells	17
McIntosh	16	Williams	131
McKenzie	58	TOTAL	2919



For more information about influenza and to order influenza educational materials, please visit www.ndflu.com or call the Division of Disease Control at 1.800.742.2180.

Vital Statistics reporting identified eight influenza-associated deaths for the 2013-14 season. Three were in adults under the age of 60. As part of the National Notifiable Diseases Surveillance System (NNDSS), the NDDoH conducts surveillance for influenza-associated pediatric deaths. There were no influenza-



2013–2014 Acute Viral Gastroenteritis Outbreak Summary

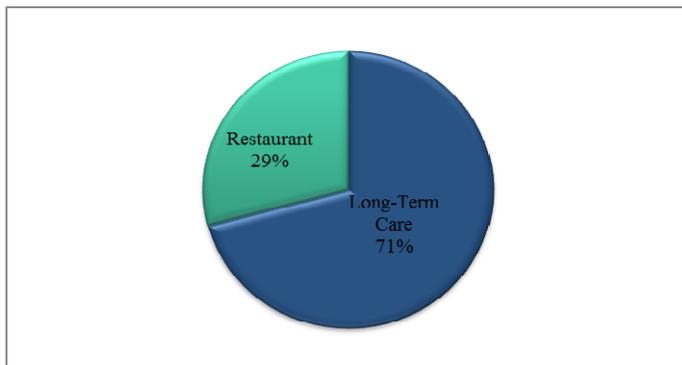
by Alicia Lepp, Surveillance Epidemiologist

Between October 2013 and June 2014, 24 acute viral gastroenteritis (AGE) outbreaks were reported to the NDDoH from 13 counties. An AGE outbreak is defined as two or more people associated with a common venue having acute vomiting and/or diarrhea lasting 24 to 48 hours.

Outbreaks of AGE often are reported in long-term care facilities. Seventeen of the 24 outbreaks reported to the NDDoH in 2013-2014 occurred in health-care settings. More than 252 residents and 120 staff of health-care settings were ill at the time the outbreaks were reported. Seven outbreaks outside of health-care settings were reported compared to one reported during the same time period last year.

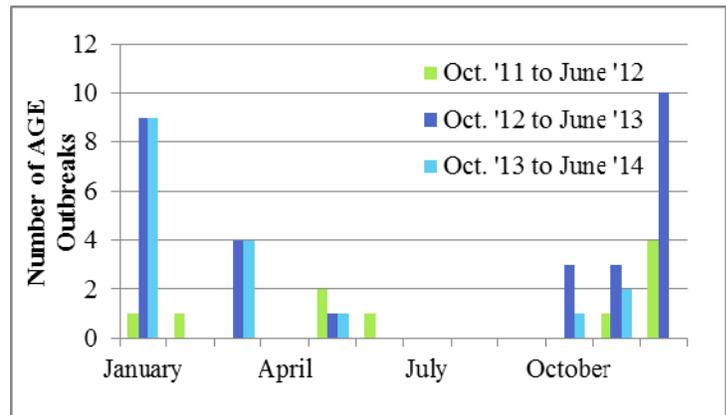
Ill food handlers are a common cause of AGE outbreaks outside of health-care settings that are spread by a common vehicle, such as food, and not via person-to-person contact.

Figure 4: AGE outbreaks by setting North Dakota, October 1, 2013 to June 30, 2014.



AGE outbreaks are known to be more common during the winter months. More than half (60%) of the AGE outbreaks reported since October 2011 occurred from December to March (Figure 5).

Figure 5: Number of AGE outbreaks reported in North Dakota by month, October 1, 2011, to June 30, 2014.



Norovirus is the most common cause of AGE outbreaks and often is called the “stomach flu,” although it has no relationship to the influenza virus that causes respiratory infections. The CDC estimates norovirus causes 21 million cases of acute gastroenteritis each year and is the most common cause of foodborne outbreaks in the United States.

Please call the **NDDoH** at **800.472.2180** if you suspect an acute gastrointestinal illness outbreak.

An acute **gastrointestinal illness** outbreak is considered as two or more people who experience a similar illness of diarrhea or vomiting after exposure to the same source.



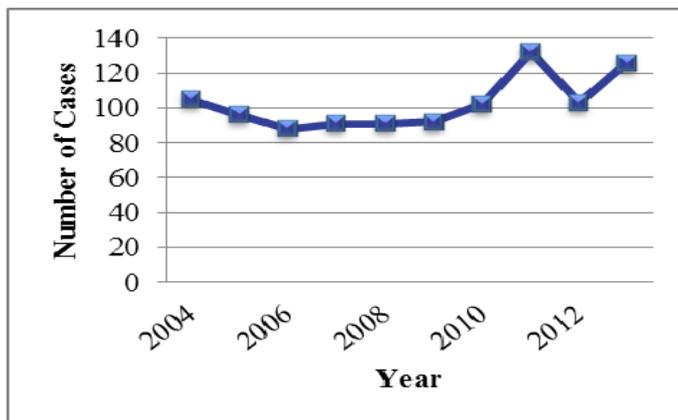
2013 Enteric Illnesses Summary

by Alicia Lepp, Surveillance Epidemiologist

Campylobacteriosis

In 2013, 126 cases of campylobacteriosis were reported to the NDDoH—a 22 percent increase from the 103 cases reported in 2012 (**Figure 5**). Statewide, campylobacter incidence was 18.7 cases for every 100,000 people in 2013. Thirty-seven counties reported cases, with Emmons (169.0 cases per 100,000 people), McIntosh (142.4 cases per 100,000 people) and Logan (100.5 per 100,000) having the highest incidence of campylobacter.

Figure 5: North Dakota Campylobacter Case Counts by Year, 2004-2013.



The median age of cases of campylobacteriosis was 31 (range: 1-89). Persons aged 30-39 years had the highest age-specific incidence rate (26.9 cases for every 100,000 people). Seventy-seven (61%) of the reported cases were male. Nineteen (15%) cases were hospitalized, with the median length of hospitalization of two days (range: 1-8 days).

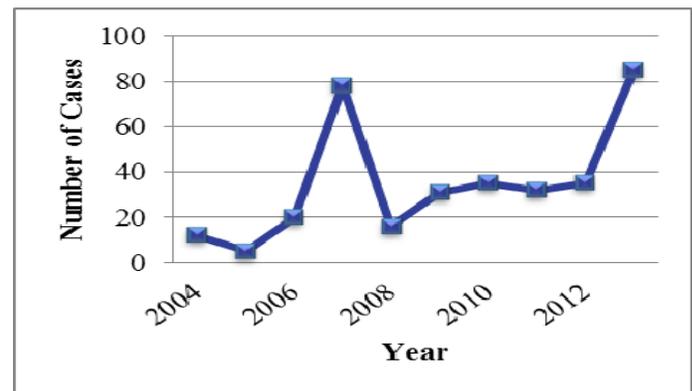
Cryptosporidiosis

In 2013, 84 cases of cryptosporidiosis were reported to the NDDoH, a 104 percent increase from 35 cases reported in 2012 (**Figure 6**). Statewide cryptosporidiosis incidence was 12.3 cases for every 100,000 people in 2013. Twenty-three counties

reported cases, with Bowman (95.2 cases for every 100,000 people), Golden Valley (59.5 cases for every 100,000 people) and Oliver (54.17 cases for every 100,000 people) having the highest incidence of cryptosporidiosis.

Figure 6: North Dakota Cryptosporidiosis Case Counts by Year, 2004-2013.

The median age of cryptosporidiosis was 26 (range: 1-82). Persons aged 5-9 years had the highest age-



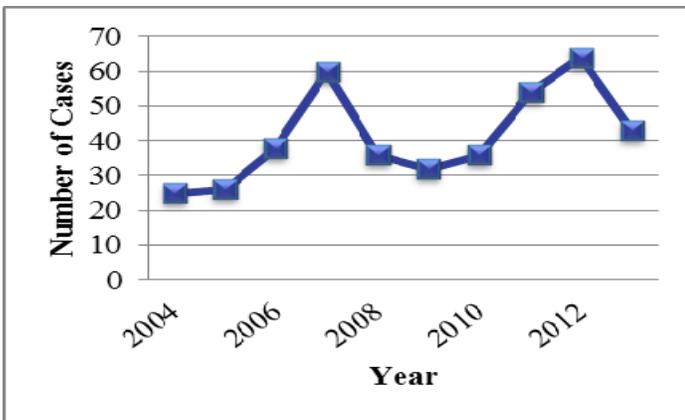
specific incidence rate (27.4 cases for every 100,000 people). Forty-seven (57%) of the reported cases were female. Five (6%) cases were hospitalized, with a median length of hospitalization of two days (range: 2-5 days).

Giardiasis

In 2013, 44 cases of giardiasis were reported to the NDDoH, a 31 percent decrease from 64 cases reported in 2012 (**Figure 7**). Statewide giardiasis incidence was 6.5 cases for every 100,000 people in 2013. Fourteen counties reported cases, with Emmons (56.3 cases for every 100,000 people), Oliver (54.17 cases for every 100,000 people) and Wells (23.77 cases for every 100,000 people) having the highest incidence of giardiasis.



Figure 7: North Dakota Giardiasis Case Counts by Year, 2004-2013.

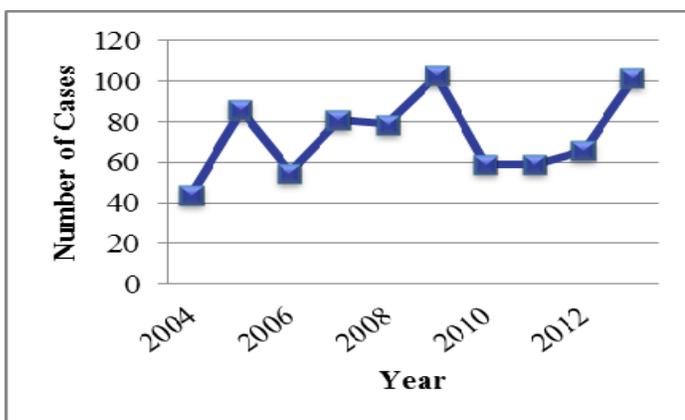


The median age of cases of giardiasis was 35 (range: 1-85). Persons aged 0-4 had the highest age-specific incidence rate (20.18 cases for every 100,000 people). Twenty-nine (66%) were male. One (2%) case was hospitalized for one day.

Salmonellosis

In 2013, 102 cases of salmonellosis were reported to the NDDoH, a 55 percent increase from 66 cases reported in 2012 (Figure 8). Statewide salmonellosis incidence was 15.2 cases for every 100,000 people in 2013. Twenty-nine counties reported cases with Emmons (112.7 cases for every 100,000 people), Sioux (96.3 cases for every 100,000 people) and Hettinger (80.7 cases for every 100,000 people) having the highest incidence of salmonellosis.

Figure 8: North Dakota Salmonellosis Case Counts by Year, 2004-2013.

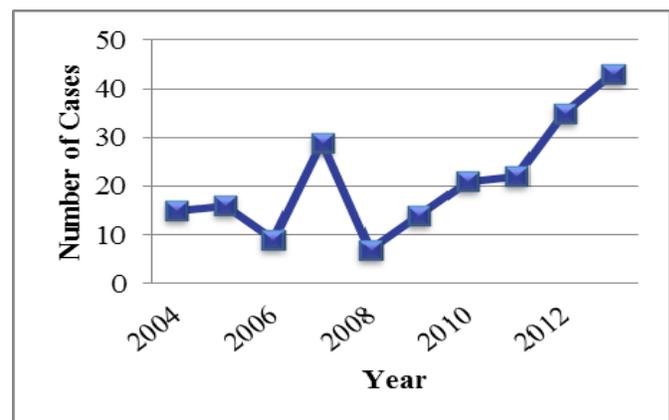


The median age of cases of salmonellosis was 30 (range: 1-88). Persons aged 5-9 years had the highest age-specific incidence rate (27.4 cases for every 100,000 people). Fifty-nine (58%) were female. Twenty-five (25%) cases were hospitalized, with the median length of hospitalization of two days (range: 1 – 6 days).

Shiga-toxin Producing E.coli (STEC)

In 2013, 43 cases of STEC were reported to the NDDoH. Of those 43 cases, 14 were *E.coli* O157:H7. In 2012, 35 cases of STEC were reported; with 13 of those cases being *E.coli* O157:H7 (Figure 9). Statewide STEC incidence was 6.4 cases for every 100,000 people in 2013. Thirteen counties reported cases, with Emmons (56.3 cases for every 100,000 people), Logan (50.3 cases for every 100,000 people) and Cavalier (50.1 cases for every 100,000 people) having the highest incidence of STEC.

Figure 9: North Dakota STEC Case Counts by Year, 2004-2013.



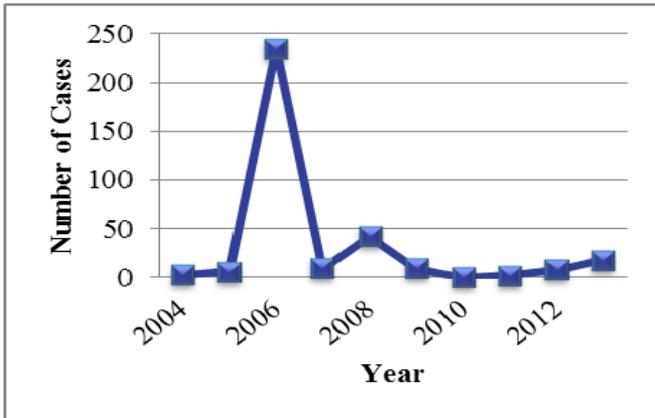
The median age of cases of STEC was 19 (range: 1-83). Persons aged 0-4 years had the highest age-specific incidence rate (26.9 cases for every 100,000 people). Twenty-seven (63%) were female. Eight (19%) cases were hospitalized, with a median length of hospitalization of 4.5 days (range: 1-6 days).



Shigellosis

In 2013, 18 cases of shigellosis were reported to the NDDoH—a 125 percent increase from the eight cases reported in 2012 (**Figure 10**). Statewide shigellosis incidence was 2.7 cases for every 100,000 people in 2013. Ten counties reported cases, with McHenry (37.1 cases for every 100,000 people), Dunn (28.3 cases for every 100,000 people) and Pembina (13.5 cases for every 100,000) having the highest incidence of shigellosis.

Figure 10. North Dakota Shigellosis Case Counts by Year, 2004-2013.



The median age of cases of shigellosis was 5 (range: 1-83). Persons aged 1-4 had the highest age-specific incidence rate (11.2 cases for every 100,000 people). Twelve (67%) were female. Four (22%) cases were hospitalized, with a median length of hospitalization of 5 days (range: 2-5 days).

For more information about enteric infections and foodborne gastrointestinal illness, visit www.ndhealth.gov/disease/GI.

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Table 3. Potential Risk Factors Among Enteric Cases, North Dakota, 2013.

Risk Factor (not mutually exclusive)	Number of Campylobacteriosis Cases (%)	Number of Cryptosporidiosis Cases (%)	Number of Giardiasis Cases (%)	Number of Salmonellosis Cases (%)	Number of STEC Cases (%)	Number of Shigellosis Cases (%)
Contact with animals	59 (46)	59 (70)	25 (56)	56 (54)	28 (65)	5 (27)
Contact with similarly ill person	6 (4)	6 (7)	0 (0)	2 (1)	4 (9)	2 (11)
Travel	22 (17)	22 (26)	13 (29)	18 (17)	4 (9)	4 (22)
Recreational water exposure	21 (16)	21 (25)	8 (18)	8 (7)	4 (9)	0 (0)
Drink untreated water	10 (7)	10 (11)	10 (22)	6 (5)	1 (2)	1 (5)



Summary of Selected Reportable Conditions				
North Dakota, 2013-2014				
Reportable Condition	April-June 2014*	January-June 2014*	April-June 2013	January-June 2013
Campylobacteriosis	34	58	51	69
Chickenpox	4	9	7	16
Chlamydia	120	1676	700	1385
Cryptosporidiosis	9	15	17	22
E. coli, shiga toxin positive (non-O157)	3	5	8	8
E. coli O157:H7	3	5	4	6
Enterococcus, Vancomycin-resistant (VRE)	33	69	125	260
Giardiasis	12	18	7	16
Gonorrhea	129	306	122	225
Haemophilus influenzae (invasive)	1	4	2	5
Acute Hepatitis A	0	3	0	2
Acute Hepatitis B	0	0	0	0
Acute Hepatitis C	0	0	0	2
HIV/AIDS ¹	19	42	12	26
Influenza	109	2105	133	3200
Legionellosis	1	3	0	0
Listeria	0	0	0	0
Lyme Disease	2	2	3	3
Malaria	3	3	1	2
Meningococcal disease ²	0	1	2	2
Mumps	0	0	2	3
Pertussis	15	18	34	38
Q fever	1	1	0	0
Rabies (animal)	5	10	15	25
Rocky Mountain spotted fever	0	0	2	2
Salmonellosis	20	37	32	52
Shigellosis	7	13	6	9
Staphylococcus aureus, Methicillin-resistant (MRSA)	34	64	31	54
Streptococcal pneumoniae ³ , (invasive, children < 5 years of age)	22	46	34	73
Syphilis, Primary and Secondary	4	9	4	5
Trichinosis	0	0	0	0
Tuberculosis	1	3	4	10
Tularemia	0	0	0	0
Typhoid fever	0	0	0	0
West Nile Virus Infection	0	0	0	0

*Provisional data

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

² Includes confirmed, probable and suspect meningococcal meningitis cases.

³ Includes invasive infections caused by streptococcal disease not including those classified as meningitis.