

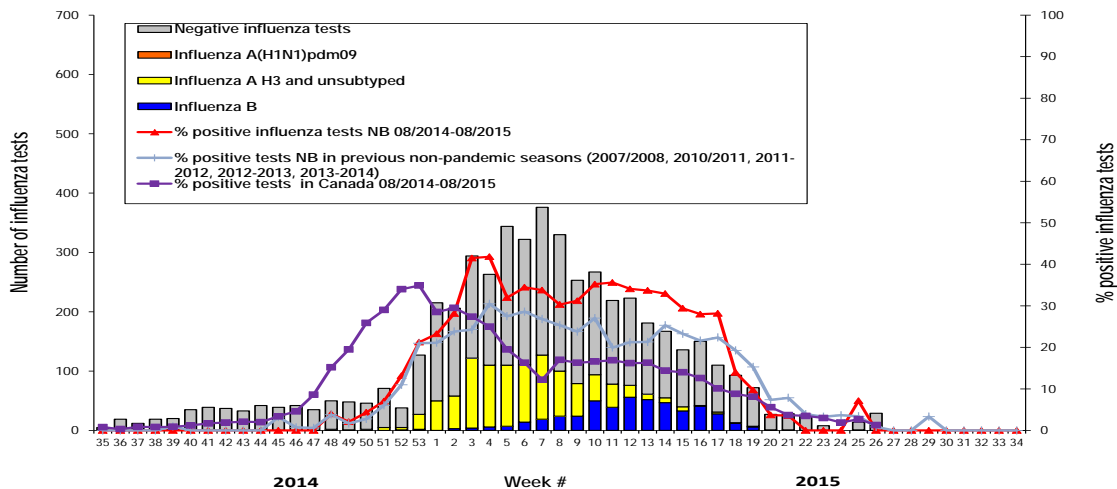
**New Brunswick Influenza Activity Summary Report: 2014-2015 season**  
(Data from August 24 2014 to July 4 2015)

**Highlights of the 2014-2015 Influenza season:**

- The number of laboratory confirmed cases for the season up to July 4, 2015 is **1408**: 938 were influenza A (all subtyped were H3N2) and 470 were influenza B. The number of reported cases is lower than the previous season (2013/2014) when 1479 cases were reported for the same period of time and the predominant strain was the influenza A (H1N1) pdm09.
- Seniors aged 65 years and over accounted for 46% of the lab confirmed influenza cases this season.
- Influenza B case counts (n= 470) this season were very high compared to the previous 5-season average (~123 cases of Influenza B).
- 97% of the A (H3N2) influenza viruses characterized by the National Microbiology Laboratory (NML) during the 2014-2015 season showed suboptimal match to this year's seasonal vaccine. However, evidence from NML indicates that this year's seasonal vaccine continued to provide protection against the circulating A (H1N1) and B strains.
- An evident feature for this season is the high number of influenza outbreaks reported from nursing homes<sup>1</sup>: 42 outbreaks in New Brunswick from the period of January 7 to April 23 2015. This is the highest number of reported nursing home outbreaks since we started collecting information on outbreaks 10 years ago.
- There have been 407 hospitalizations reported, including 40 ICU admissions and 26 deaths. This number is higher than the previous season when 266 hospitalizations including 53 ICU admissions and 16 deaths were reported for the same period of time.
- 75% of all hospitalizations occurred among individuals 65 years old or above in this current season compared to 30% in the previous season for the same time period.

**1) Influenza Laboratory Data<sup>2</sup> (Data source: Georges-Dumont lab results)**

**Graph 1. Number and percent of positive influenza specimens in New Brunswick by week, up to July 4 2015**



**Note: Most of the Influenza A untyped specimens are of the predominant strain.**

<sup>1</sup> The 2014-2015 Influenza season provided a perfect environment for nursing home outbreaks given the predominant A (H3N2) strain with its selectivity to the elderly and the vaccine mismatch. This feature was observed as well at the national level.

<sup>2</sup> For more details on influenza cases, please refer to the Weekly New Brunswick Influenza Reports posted at the following link: [http://www2.gnb.ca/content/gnb/en/departments/ocmoh/cdc/content/influenza/influenza\\_surveillance\\_activities.html](http://www2.gnb.ca/content/gnb/en/departments/ocmoh/cdc/content/influenza/influenza_surveillance_activities.html)

Table 1. Demographics of positive influenza tests in New Brunswick, cumulative, up to July 4 2015 (data source: G. Dumont lab results)

Number of Laboratory Confirmed Influenza Cases Stratified by Type, Gender, and Age Groups					
Cumulative					
August 24, 2014-July 4, 2015					
	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	B Total
<b>Gender</b>					
Male	120	0	258	378	216
Female	163	0	397	560	254
<b>Age Groups</b>					
<5	9	0	36	45	27
5-9	6	0	41	47	43
10-19	10	0	31	41	43
20-44	29	0	96	125	80
45-64	54	0	110	164	146
65+	175	0	341	516	131

2) Nursing Homes Influenza Outbreak<sup>3</sup> Data (Data source: Influenza Outbreak Investigation Final Report submitted by Regional Public Health, hard copy)

- In NB, there are 65 licensed nursing homes, out of which 41 reported new influenza outbreaks<sup>4</sup> during this season. One nursing home reported 2 separate outbreaks during the same season bringing the total number of outbreaks to 42 for this season.
- Regional distribution of the nursing home outbreaks is presented in table 2.

Table 2. Influenza outbreak reports, by Region, for season 2014-2015.

Region	Total# of nursing homes	Total # of reported outbreaks
Region 1	14	10
Region 2	15	9
Region 3	15	9
Region 4	6	4
Region 5	2	1
Region 6	9	4
Region 7	4	5

- Antivirals prophylaxis was recommended in 93% (39/42) of the nursing homes outbreaks. Out of the 39 nursing homes where antivirals were recommended, 34 had them administered to residents.
- 37 were influenza type A outbreaks, 4 were influenza type B outbreaks and 1 was both an influenza A & B outbreak.
- 86% (36/42) of the nursing home outbreaks occurred throughout the facility versus 14% that were considered localized outbreaks.
- 50% (21/42) of the nursing home reported hospitalizations related to the outbreaks, for a total of 29 hospitalizations.

<sup>3</sup> An influenza outbreak in a nursing home is defined as two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case.

<sup>4</sup> We received 43 reports; however one outbreak report was excluded from the analysis since confirmed cases were only seen in staff (none in residents).

- 55% (23/42) of nursing homes reported deaths related to the outbreaks, for a total of 59 deaths.
- Due to the large variability in their capacity (number of residents), the nursing homes were categorized into 3 groups<sup>5</sup>: less than 50 residents, 50 to less than 100 residents and more than 100 residents.

**Table 3.** Influenza outbreak reports, by nursing home category, for season 2014-2015.

Nursing Home Category	Number of outbreaks (N=42)	Related to the reported outbreaks, # of residents					
		Total	With ILI	Tested (Swabbed)	With confirmed Influenza	hospitalized	deaths
< 50 residents	17	539	200	76	44	11	14
50 to < 100 residents	14	950	244	61	36	9	13
≥100 residents	11	1742	367	106	55	9	32

**Table 4.** Immunization status and ILI attack rate for residents versus staff, by nursing home category

	Nursing Home Categories	Received Seasonal Influenza vaccine Median%(range)	ILI attack rate Median%(range)
Residents	< 50 residents	94% (73-100%)	39% (12.8-65.4%)
	50 to <100 residents	91% (84-100%)	23.4% (4.2-56.7%)
	≥100 residents	93% (78-96%)	15.9% (7.1-48.8%)
Staff	< 50 residents	50% (15-100%)	7.1% (0-62.5%)
	50 to <100 residents	50% (19-94%)	3.4% (0-18.8%)
	≥100 residents	51% (2-85.4%)	4.7% (0-17.9%)

**Table 5.** Median duration and range (in days) for variables of interest, by nursing home category

	< 50 residents	50 to < 100 residents	≥100 residents
Median duration in days between first ILI case and date reported to Public Health (range)	3 (0-13)	3 (0-33)	5 (3-21)
Median duration in days between first ILI case and lab confirmation(range)	9 (3-25)	4 (0-36)	6 (3-24)
Median duration of outbreak in days <sup>6</sup> (range)	13 (3-18)	17.5 (6-35)	20 (13-27)
Median duration in days of antiviral prophylaxis <sup>7</sup> (range)	10 (4-17)	10 (5-10)	17 (10-20)

<sup>5</sup> These categories were based on our data findings.

<sup>6</sup> Duration of outbreak is indicated as the time period in days from the date of first positive laboratory confirmation to the date when outbreak was declared over.

<sup>7</sup> Only 61% (21/34) of the reports for nursing homes administering antiviral chemoprophylaxis had information on duration of antiviral use.

3) Influenza associated Hospitalization Data (Data source: New Brunswick Influenza Hospitalization and Death Surveillance Database, submitted by Regional Public Health, electronic copy)

A. Hospitalizations, ICU admissions and outcome (cumulative up to July 4 2015)<sup>8</sup>

Graph 2 and 3, Table 6 and 7.

- There have been **407 hospitalizations** reported, of which **40 were admitted to the ICU, and 26 deceased**. This number is higher than the previous season when 266 hospitalizations, 53 ICU admissions and 16 deaths were reported for the same period of time.
- 75% of all hospitalizations occurred among individuals 65 years old or above in this current season compared to 30% in the previous season for the same time period.
- **The 26 influenza related deaths:**
  - were reported from all regions but mostly from region 1(7/26), region 2 (5/26), region 3 (5/26) and region 4 (4/26).
  - occurred between January 5 and April 24 2015
  - were 13 males and 13 females
  - had a median age of 85 years ( range 65-97 years)
  - 24 out of the 26 had at least one risk factor<sup>9</sup>
  - 8 were not vaccinated, 9 vaccinated and the vaccination status is unknown for 9.
- Hospitalizations occurred between the period of November 18, 2014 and June 19, 2015. However some cases were hospitalized several months before influenza laboratory confirmation.
- The median age for hospitalization was 76 years (range 1 month-98 years).
- Most of the hospitalized cases were from Region 1 (41%), followed by Region 2 (17%), 3 (17%) and 6 (12%).
- Information about discharge was available for 250 patients. The median length of stay was 6 days (range 0-86 days).
- 52% (210/407) of the hospitalized cases were treated with antivirals, of those 13 (6%) were deceased and 44% (179/407) of the hospitalized cases were not treated with antivirals, of those 11 (6%) were deceased.
- 73% (296/407) of the hospitalized cases were due to influenza A and 27% (110/407) were due to influenza B. One hospitalized case was due to a co-infection of A & B. The median age for influenza A hospitalized cases was 77.5 years versus 71.5 for influenza B hospitalized cases.
- 16% (18/110) of the influenza B hospitalized cases were admitted to ICU (median age of 63.5 years) versus 7% (22/296) for the influenza A hospitalized cases (median age of 79 years).

B. Hospitalization and vaccination status

- 24% of the hospitalized cases (99/407) were not vaccinated; vaccination status unknown for 42% of hospitalized individuals (169/407) and 34% (139/407) received the vaccine.
  - Of those with known vaccination status (Yes+No=238) 58% (139/238) were vaccinated.
  - NOTE:** This proportion cannot be generalized to the whole hospitalized population, as 42% of cases report unknown vaccination status. These individuals may include vaccinated or unvaccinated individuals.
- 23% (9/40) of cases admitted to the ICU didn't receive the current seasonal vaccination. 32.5% (13/40) received the vaccine, and the vaccination status is unknown for 45% (18/40).

<sup>8</sup> Disclaimer: Hospitalizations (including ICU admissions) are influenza associated; they may or may not be due to influenza. Deaths are influenza associated; influenza may not be the direct cause of death.

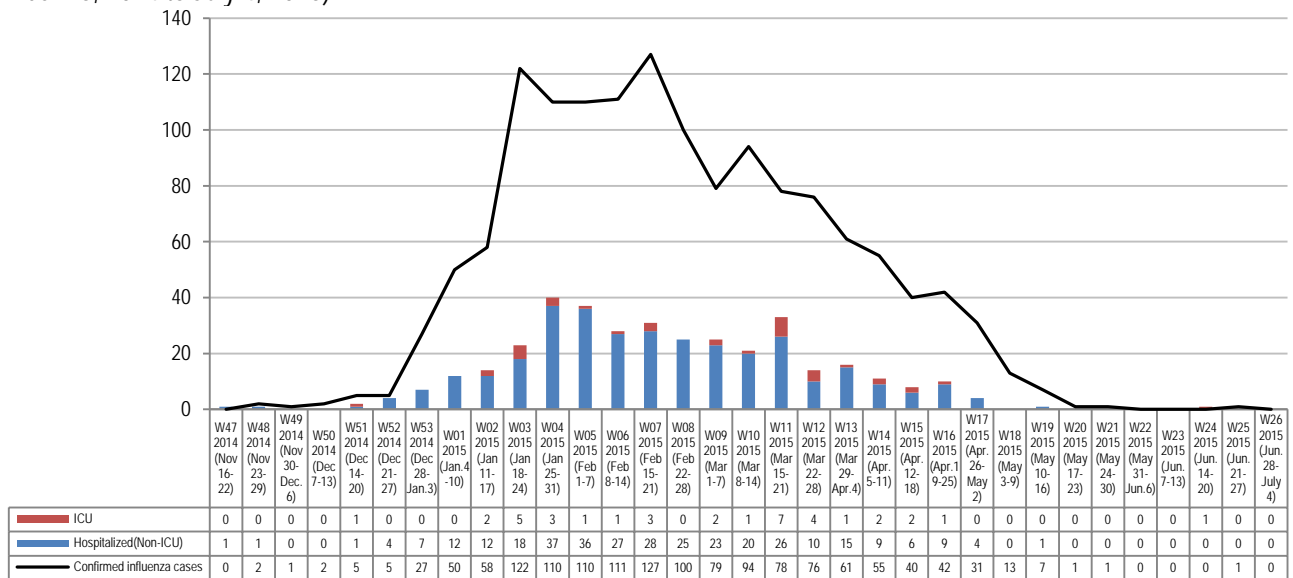
<sup>9</sup> Risk factors include: chronic pulmonary disease, asthma, chronic heart disease, diabetes, kidney disease, immunosuppressed, cancer, chronic liver disease, anemia/hemoglobinopathy, chronic neurological disease, pregnant, First nations, obesity, current smoker, resident of a nursing home, children who have been treated with ASA for long period of time, and other chronic diseases.

- Among those hospitalized, 97% (396/407) met the high risk eligibility criteria for publicly funded vaccine<sup>10</sup>.
- Those that were hospitalized (non ICU) and not vaccinated (n=90) 86 individuals (96%) would have been eligible to receive publicly funded seasonal influenza vaccine.
- Among those with ICU admissions not vaccinated (n=9), all were considered to meet the high risk eligibility criteria for publicly funded vaccine.

C. Risk factors for hospitalization: Graph 4

- 66% of the hospitalized cases had at least 2 risk factors.
- In addition to age (< 5 years or ≥ 65 years), the predominant risk factors in the hospitalized cases were chronic heart disease, chronic pulmonary disease, diabetes, cancer and being a resident of a nursing home.

**Graph 2. Number of Laboratory Confirmed Influenza Cases and Level of Care\* by CDC Week, New Brunswick (November 16, 2014 to July 4, 2015)**

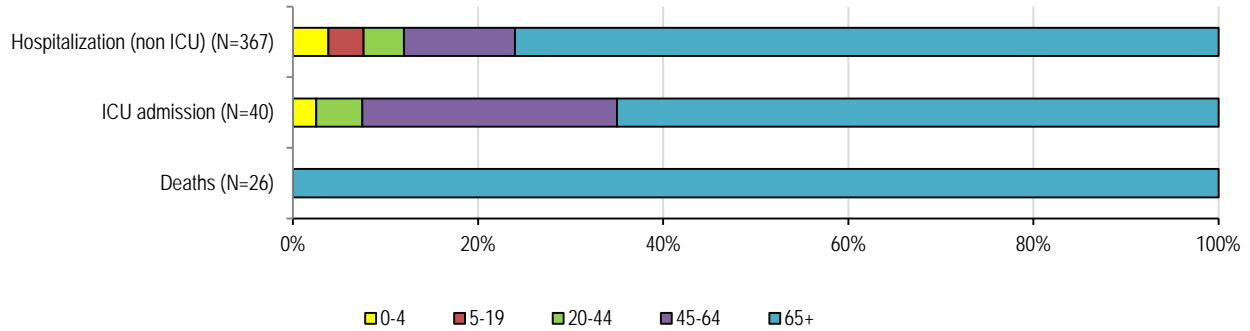


\* Date of hospital admission was used as a proxy for ICU patients because Date of ICU admission is not available for all patients

Note: Those who had been hospitalized 15 days or more prior to laboratory confirmation date were excluded from the graph.

<sup>10</sup> Meeting the high risk eligibility criteria for publicly funded vaccine includes: children between 6 months and 18 years old, people 65 years and older, persons having any co-morbid condition, being pregnant, being a First Nation or residing in a nursing home. It does not include people capable of transmitting influenza to those at high risk. Link to eligibility criteria can be found in [SEASONAL INFLUENZA VACCINE \("Flu shot"\) FACTSHEET](#)

**Graph 3.** NB influenza-related Hospitalization, ICU admissions and Deaths by Age group, Influenza season 2014-2015 (Data up to July 4, 2015)



**Table 6.** Number of Hospitalizations stratified by influenza type, gender and age groups for current and previous season up to July 4.

Number of Hospitalizations Stratified by Type, Gender, and Age Groups											
Cumulative current season up to July 4, 2015							Cumulative past season up to July 4, 2014				
	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	A & B co-infection	B Total	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	B Total
<b>Gender</b>											
Male	14	0	104	118	0	56	0	37	93	130	10
Female	21	0	157	178	1	54	0	47	71	118	8
<b>Age Groups</b>											
<5	0	0	11	11	0	4	0	8	14	22	0
5-9	0	0	2	2	0	7	0	1	5	6	1
10-19	0	0	2	2	1	2	0	0	4	4	2
20-44	0	0	13	13	0	5	0	16	29	45	1
45-64	5	0	26	31	0	24	0	28	70	98	7
65+	30	0	207	237	0	68	0	31	42	73	7

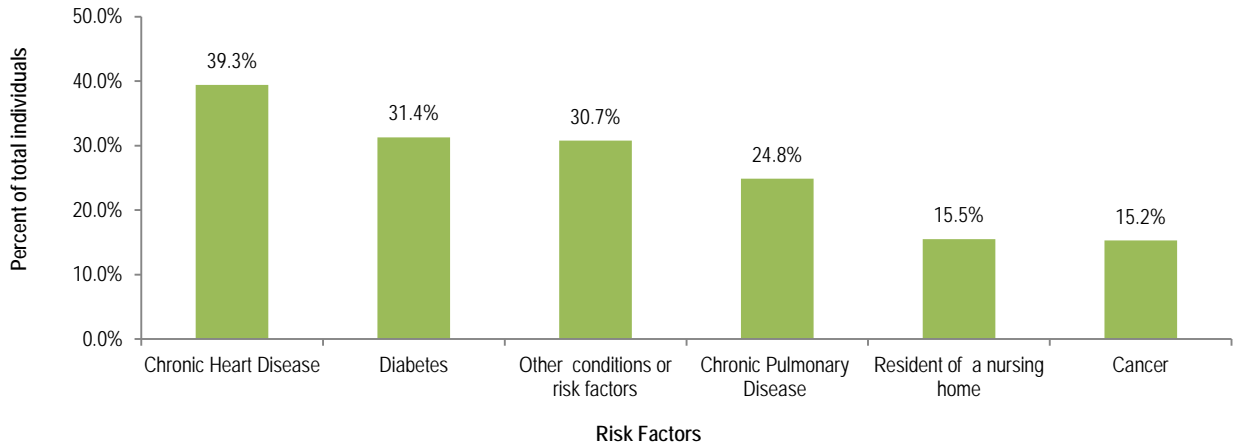
**Table 7.** NB influenza-related Hospitalization, ICU admissions and Deaths by Region, influenza season 2014-2015 (Data up to July 4 2015)

		R1	R2	R3	R4	R5	R6	R7
Level of care	Hospitalization (non ICU)	149	64	59	23	8	46	18
	ICU admission*	19	6	9	0	1	1	4
	<b>Total Hospitalization**</b>	<b>168</b>	<b>70</b>	<b>68</b>	<b>23</b>	<b>9</b>	<b>47</b>	<b>22</b>
Disposition	Discharged	149	20	24	16	6	24	11
	Deaths	7	5	5	4	1	3	1

Notes for Table 7:

- \* = the number of individuals admitted to ICU
- \*\* = total hospitalizations (includes those admitted to ICU)

Graph 4. Predominant risk factors and underlying conditions in hospitalized cases, percentage of total hospitalized cases (Data up to July 4, 2015)



Note: Some individuals may have more than 1 risk factor or condition.