

New Brunswick Influenza Summary Report: 2017-2018 season  
(Data from August 27, 2017 to June 23, 2018)

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Highlights of the 2017-2018 Influenza season:

- This season, influenza activity peaked between week 8 and 10 (February 18 to March 10, 2018) in New Brunswick. Nationally, the peak of activity, mainly driven by the Western Provinces, was observed at week 6 (February 4 to February 10, 2018).
- In New Brunswick, the activity in the current season started very early compared to previous years: influenza activity was ongoing since week 40 (early October) which is atypical for New Brunswick where sustained activity is usually observed starting week 51 or 52 (end of December).
- The number of influenza tests submitted had increased by more than 4400 tests compared to the previous season and the overall positivity rate was higher (26% versus 20% in 2016-2017).
- Up to June 23 2018, **2719** laboratory confirmed influenza cases were reported: 1408 were influenza A (52% of all positive) and 1296 were influenza B (48% of all positive).
- The numbers of cases reported this season was the highest since the start of the influenza surveillance system in New Brunswick and was due to the double burden from the co-circulation of both Influenza A and B.
- Detection of Influenza A (H3N2) was higher than Influenza B until week 3. From week 4 to week 15, influenza B detections exceeded those of influenza A. Both types were contributing equally to the burden starting week 16 until the end of influenza activity in week 21.
- Adults aged 20-64 accounted for 40% of the lab confirmed influenza cases this season and those aged 65 and above accounted for 35% of lab confirmed influenza cases.
- The median age for influenza A and influenza B cases was 55 years and 50 years old respectively.
- There have been **690** hospitalizations reported, including **62** ICU admissions and **50** deaths.
- Among all hospitalized this season, 70% were individuals 65 years and older (compared to 66% in 2016/2017 and 75% in 2014/2015) and 6% were children less than 5 years of age (compared to 6% in 2016/2017 and 4% in 2014/2015).
- Twenty-four nursing homes reported outbreaks.
- Early season estimates of the 2017/2018 vaccine effectiveness showed an adjusted vaccine effectiveness (VE) of 17% (95% confidence interval (CI): -14 to 40) against the influenza A(H3N2) and 55% (95% CI: 38 to 68) against influenza B.

1) Influenza Laboratory Data<sup>1</sup> (Data source: Lab results from the Georges L. Dumont University Hospital Center)

Graph 1. Number and percent of positive influenza specimens in New Brunswick by week, up to June 23 2018

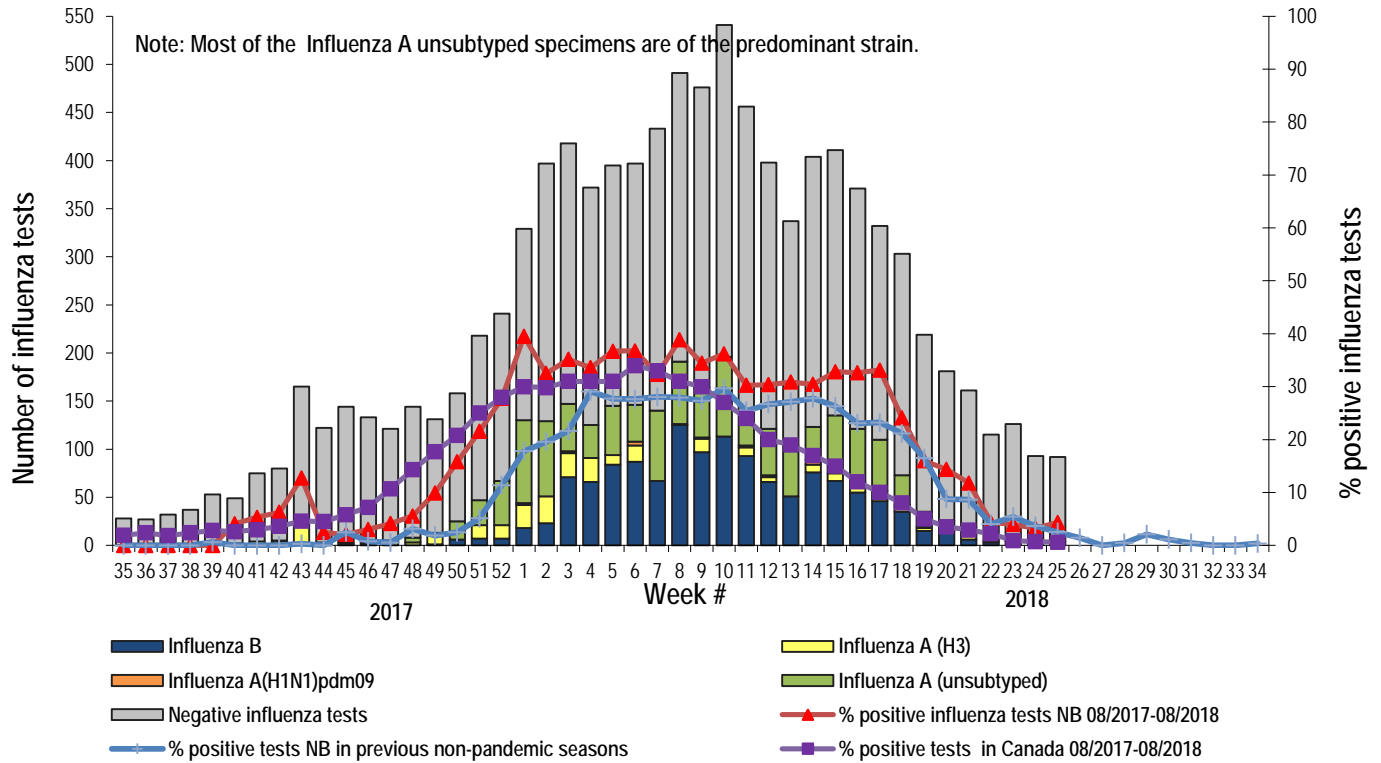


Table 1. Demographics of positive influenza tests in New Brunswick, cumulative, up to June 23 2018 (data source: G. Dumont lab results)

Number of Laboratory Confirmed Influenza Cases Stratified by Type, Gender, and Age Groups						
Cumulative (August 27, 2017-June 23, 2018)						
	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	B Total	A & B co-infection
<b>Gender</b>						
Male	130	13	501	644	586	7
Female	150	12	602	764	710	8
<b>Age Groups</b>						
<5	23	5	104	132	98	0
5-9	13	1	79	93	149	3
10-19	12	2	67	81	124	2
20-44	41	11	198	250	202	3
45-64	63	2	247	312	327	2
65+	128	4	408	540	396	5

<sup>1</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)

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

- In NB, there are 68 licensed nursing homes, out of which 24 reported influenza outbreaks during this season. One nursing home reported 2 separate outbreaks during the same season bringing the total number of outbreaks to 25 for this season.
- This is higher than the average number of outbreaks reported in the past 5 seasons (average of 18 outbreaks).
- Regional distribution of the nursing home outbreaks is presented in table 2.

Table 2. Influenza outbreak reports, by Region, for season 2017-2018.

Region	Total# of nursing homes	Total # of reported outbreaks
Region 1	15	8
Region 2	16	7
Region 3	16	7
Region 4	5	0
Region 5	2	0
Region 6	9	2
Region 7	5	1

- Fifteen were influenza A outbreaks, 9 were influenza B outbreaks and 1 was an influenza A & B outbreak. The first influenza outbreak was reported on December 27, 2017 and the last outbreak was reported on May 7, 2018.
- The median percentage immunized for residents was 93% (range 70%-100 %) and the median percentage immunized for staff was 44% (range 16%-100%).
- The median ILI attack rate for residents was 14.3% (range 1.9% - 52.5 %) and the median ILI attack rate for staff was 2.0% (range 0% - 19.2 %).
- The median duration of the outbreaks<sup>3</sup> was 12 days (range 6-29 days).
- The median duration between first ILI case and laboratory confirmation was 3 days (range 0-17 days).
- 72% (18/25) of the nursing home outbreaks occurred throughout the entire facility versus 28% that were considered localized outbreaks.
- Antivirals prophylaxis was recommended in 100% (25/25) of the nursing homes outbreaks and all administered the prophylaxis to residents.
- 48% (12/25) of the nursing home reported hospitalizations related to the outbreaks.
- 33 related deaths<sup>4</sup> were reported from 14 nursing homes (out of the 24) experiencing influenza outbreaks.

<sup>2</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>3</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>4</sup> These deaths occurred among ILI cases whether they had lab-confirmed influenza or not.

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 June 23 2018)<sup>5</sup>

Graph 2 and 3, Table 3 and 4.

- There have been **690 hospitalizations** reported, of which **62 were admitted to the ICU**.
  - This season, the overall number of hospitalizations was higher than that in 2016/2017 season (predominant H3N2) when 329 hospitalizations were reported for the same time period. However the proportion of ICU admissions was slightly lower this season (9% of all hospitalized) compared to the 2016/2017 season (11% of all hospitalized).
- 70% of all hospitalizations occurred among individuals 65 years old or above in this current season compared to 66% in the 2016/2017 season, and 75% in the 2014/2015 season for the same time period.
- **50 influenza related deaths have been reported:** 21 were males and 29 were females. The median age was 85 years (range 45-98 years). Deaths occurred in the period between October 23 2017 and June 1 2018. 84% (42/50) had at least one risk factor<sup>6</sup>, 17 were vaccinated, 21 were not vaccinated and the vaccination status was unknown for 12.
- Hospitalizations occurred between the period of September 30, 2017 and June 1, 2018. However some cases were hospitalized several months before influenza laboratory confirmation.
- 10% (67/690) of the hospitalizations were related to nosocomial outbreaks.
- The median length of stay was 6 days (range 1-368 days).
- The median age for hospitalization was 74 years (range 2 months-101 years).
- Most of the hospitalized cases were from Region 1 (34 %), followed by Region 3 (33 %), 2 (12 %) and Region 7 (11%).
- 60% (411/690) of the hospitalized cases were treated with antivirals.

B. Hospitalizations and ICU admissions by influenza type

- 61% (419/690) of the hospitalized cases were due to influenza A and 39% (268/690) were due to influenza B.
- The median age for influenza A hospitalized cases was 76 years (3 months -101 years) and 71 years (2 months- 98 years) for the influenza B hospitalized cases.
- 9% of all (37/419) of the influenza A hospitalized cases were admitted to ICU (median age of 64 years) and 9% (25/268) of the influenza B hospitalized cases were admitted to ICU as well (median age of 67 years).
- 20% (8/41) of hospitalized children less than 5 years of age were admitted to ICU compared to 24% (5/21) in the previous season.

C. Hospitalizations and vaccination status

- Influenza vaccine is not recommended in infants less than 6 months.
- Six hospitalized children were under 6 months of age and not able to receive the vaccine, therefore were excluded from the analysis of the vaccination status.
- Out of 684 hospitalized cases who could receive the vaccine, 245 were not vaccinated (36%) while 36% (247/684) received the vaccine; vaccination status was unknown for 28% of hospitalized individuals (192/684).

<sup>5</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.

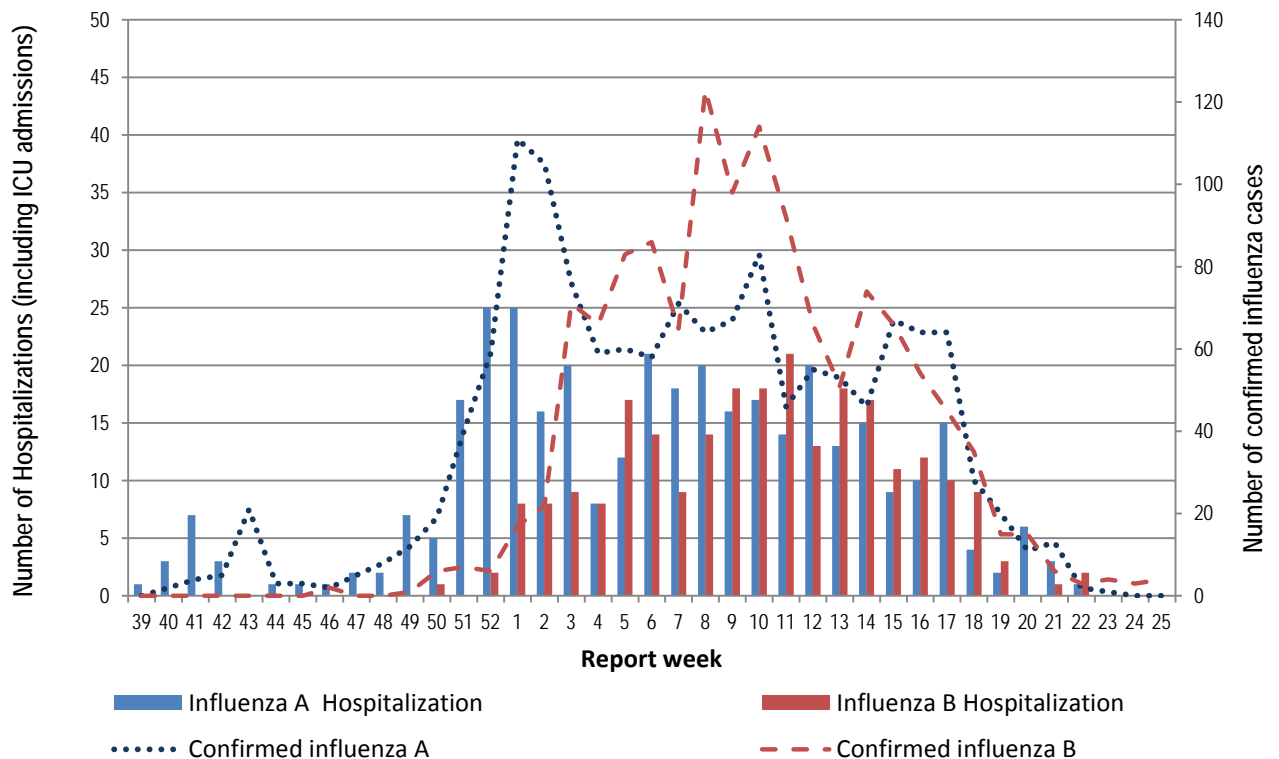
<sup>6</sup> Risk factors include: chronic pulmonary disease, asthma, chronic heart disease, diabetes, kidney disease, immunosuppressed, cancer, chronic liver disease, anemia/hemoglobinopathy, chronic neurological disease, pregnant, First nations, obesity, current smoker, resident of a nursing home and children who have been treated with ASA for long period of time, and other chronic diseases.

- Of those with known vaccination status (Yes+No=492), 50% (247/492) were vaccinated.  
**NOTE:** This proportion cannot be generalized to the whole hospitalized population, as 28% of cases report unknown vaccination status. These individuals may include vaccinated or unvaccinated individuals.
- 46% (28/61) of cases admitted to the ICU didn't receive the current seasonal vaccination. 29.5% (18/61) received the vaccine, and the vaccination status is unknown for 24.5% (15/61).
- Among those hospitalized who could receive the vaccine, 97% (666/684) were considered meeting the high risk eligibility criteria for publicly funded vaccine<sup>7</sup>.
- Among those hospitalized and not vaccinated (n=245), 235 individuals (96%) would have been eligible to receive publicly funded seasonal influenza vaccine.
- Among those with ICU admissions and able to receive the vaccine, 97% (59/61) were considered meeting the high risk eligibility criteria for publicly funded vaccine.

D. Risk factors for hospitalization: Graph 4

- 66% of the hospitalized cases had at least 2 risk factors and 84% had at least 1 risk factor.
- In addition to age (being 65 years of age and older), the main prevalent risk factors in the hospitalized cases were chronic pulmonary disease, diabetes, chronic heart disease, cancer and chronic neurological disease.

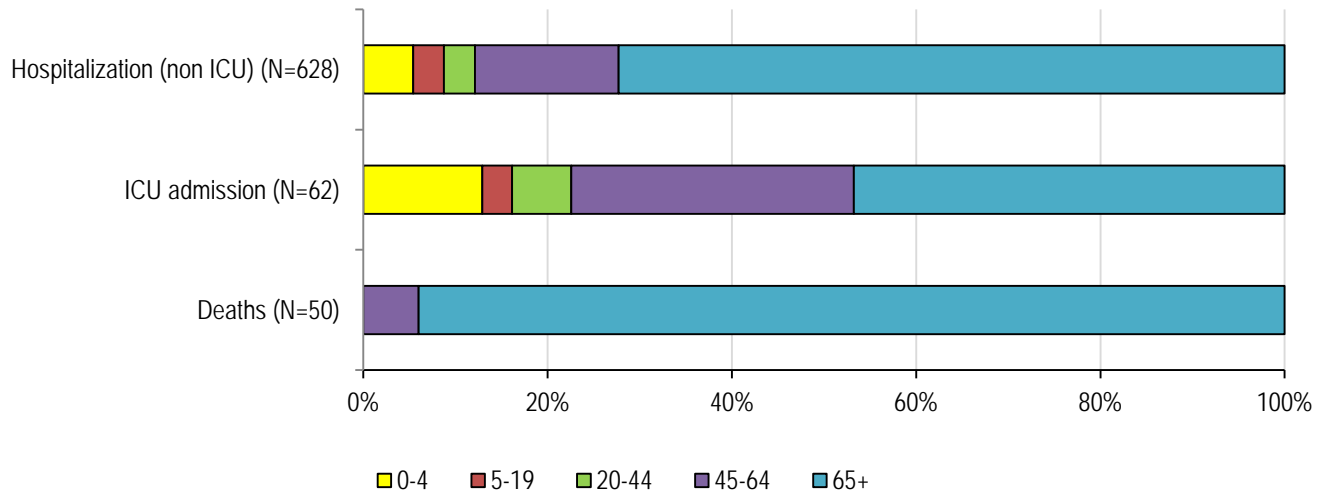
Graph 2. Number of Laboratory Confirmed Influenza Cases and Level of Care\* by Report Week, New Brunswick (September 24, 2017 to June 23, 2018)



\* 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>7</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 2017-2018 (Data up to June 23, 2018)



**Table 3.** Number of Hospitalizations stratified by influenza type, gender and age groups for current and previous season up to June 23.

Number of Hospitalizations Stratified by Type, Gender, and Age Groups												
Cumulative current season up to June 23, 2018							Cumulative season 2016/2017 up to June 23, 2017					
	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	B Total	A & B Co-infection	A(H3)	A(H1N1) pdm09	A (unsubtyped/ Other)	A Total	B Total	A & B Co-infection
<b>Gender</b>												
Male	46	4	163	213	111	2	18	0	137	155	19	0
Female	55	3	148	206	157	1	15	0	124	139	16	0
<b>Age Groups</b>												
<5	9	0	17	26	16	0	3	0	14	17	4	0
5-9	1	1	5	7	7	1	2	0	9	11	2	0
10-19	2	0	3	5	3	0	3	0	3	6	0	0
20-44	2	1	11	14	11	0	1	0	12	13	2	0
45-64	14	0	52	66	50	1	4	0	46	50	8	0
65+	73	5	223	301	181	1	20	0	177	197	19	0

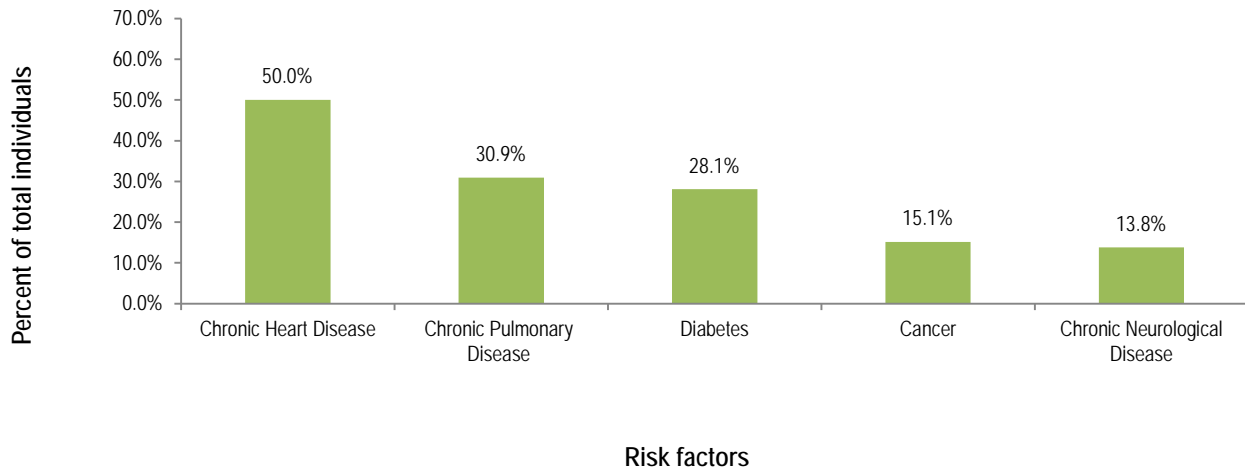
**Table 4.** NB influenza-related Hospitalization, ICU admissions and Deaths by Region, influenza season 2017-2018 (Data up to June 23 2018)

		R1	R2	R3	R4	R5	R6	R7
Level of care	Hospitalization (not ICU)	217	69	219	20	4	36	63
	ICU admission*	20	11	10	5	0	2	14
	<b>Total Hospitalization**</b>	<b>237</b>	<b>80</b>	<b>229</b>	<b>25</b>	<b>4</b>	<b>38</b>	<b>77</b>

Notes for Table 4:

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

**Graph 4.** Predominant risk factors and co-morbid conditions in hospitalized cases, percentage of total hospitalized cases (Data up to June 23, 2018)



Note: Risk factors are not mutually exclusive; some individuals may have more than 1 risk factor or condition.