

New Brunswick Influenza Summary Report: 2022-2023 season
(Data from August 28, 2022 to August 19, 2023)

Highlights of the 2022-2023 Influenza season:

A. Influenza Activity Surveillance

- **This season, we observed an earlier start of influenza activity compared to previous seasons with the influenza A(H3N2) being the most common strain.** Typical activity for New Brunswick starts in the last two weeks of December, however this season, the activity started to increase in mid-October.
- Influenza activity this season reached a peak at week 48 (last week of November) which is earlier than the expected level since activity usually peaks around mid-February. Nationally, the peak of activity was also observed around week 47 (mid-November).
- The influenza A (H3N2) strain typically affects the elderly population (65 and older), however this season, **children and youths aged 19 years and younger accounted for 31% of the positive influenza detections.**
- Between August 28, 2022 to August 19, 2023, **4628** laboratory confirmed influenza cases were reported: 4603 were influenza A, and 25 was an influenza B. Of the subtyped influenza A (4% of all influenza A detections), 90% were influenza A (H3N2) and 10% influenza A(H1N1).
- **Adults aged 20-64 accounted for 45% of the lab confirmed influenza cases** this season and those **aged 65 and above** accounted for **24%** of lab confirmed influenza cases. **Children less than 10 years of age accounted for 22% of all laboratory-confirmed influenza cases.**
- **The median age for influenza A cases was 35 years** which is lower compared to the two previous non-pandemic seasons when the median age for influenza A cases was 38 years of age.
- The **number of total tests** performed for influenza this season was **higher** than the average number of tests performed in the two seasons prior to the pandemic, however the **overall positivity rate was below** (8.8%) the average positivity for the two seasons prior to the pandemic (21.9%).
- There have been **886 hospitalizations** reported, including **80 ICU admissions and 69 deaths**. This is higher than the previous non-pandemic seasons.
- **Among all hospitalized this season, 56% were individuals 65 years and older** (similar to the 2021/2022 season) and **12% were children less than 10 years of age** (similar to the 2021/2022 season).
- **There were 250 influenza-like illness (ILI) outbreaks in schools (significantly higher than average)** in addition to **21 nursing home outbreaks** were reported. The number of ILI outbreaks in schools should be interpreted with caution since the distinction between influenza-like-illness and COVID-like-illness is not always evident.
- **It must be noted that many influenza surveillance indicators might have been influenced by the COVID-19 pandemic, due to changes in healthcare-seeking behaviour, and testing capacity.**

B. Influenza Vaccine administration and Adverse Events Following Immunizations (AEFI)

- During the 2022-2023 influenza season, 30.9% of individuals in New Brunswick received the current seasonal influenza vaccine, most of them (46%) were 65 years and older. Pharmacies administered 61% of the vaccines, 28% of vaccines were administered by Primary Care Providers and 11% were administered by other providers.
- Thirty-five AEFI (Adverse Events Following Immunization) were reported to Public Health.
- Thirty-three percent of the reported AEFI reaction types were allergic in nature.
- Five serious AEFIs were reported.

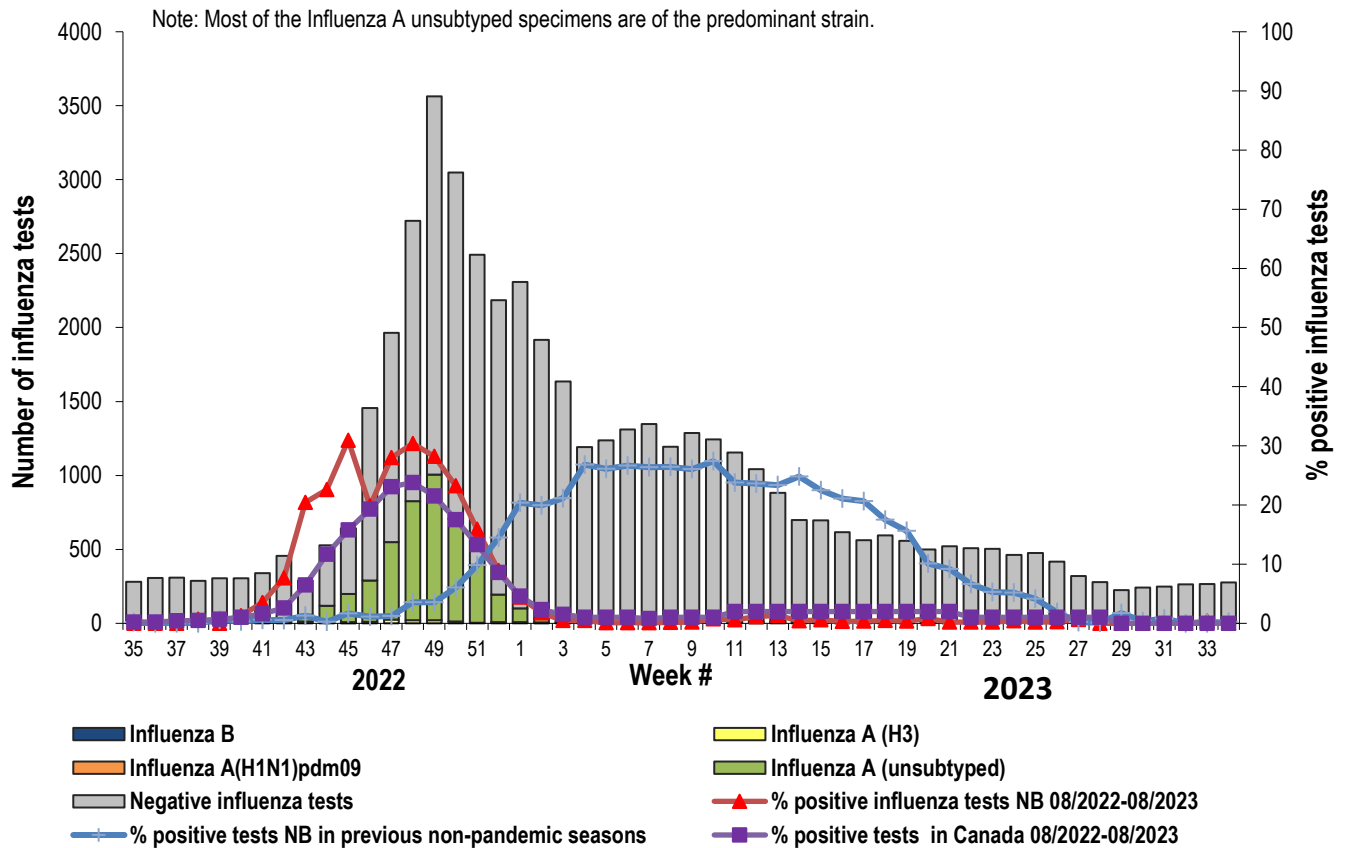
C. National Estimates for Vaccine Effectiveness

- Based on a published [Canadian Vaccine Effectiveness Study](#), for data collected between Nov. 1, 2022 and Jan. 6, 2023, vaccine effectiveness (VE) was estimated to be 54% against influenza A(H3N2). This means that five cases out of 10 would have been prevented if they received the vaccination. Due to the dominant circulation of influenza A(H3N2) this season, the VE estimate was only available for one influenza subtype.

Influenza Surveillance

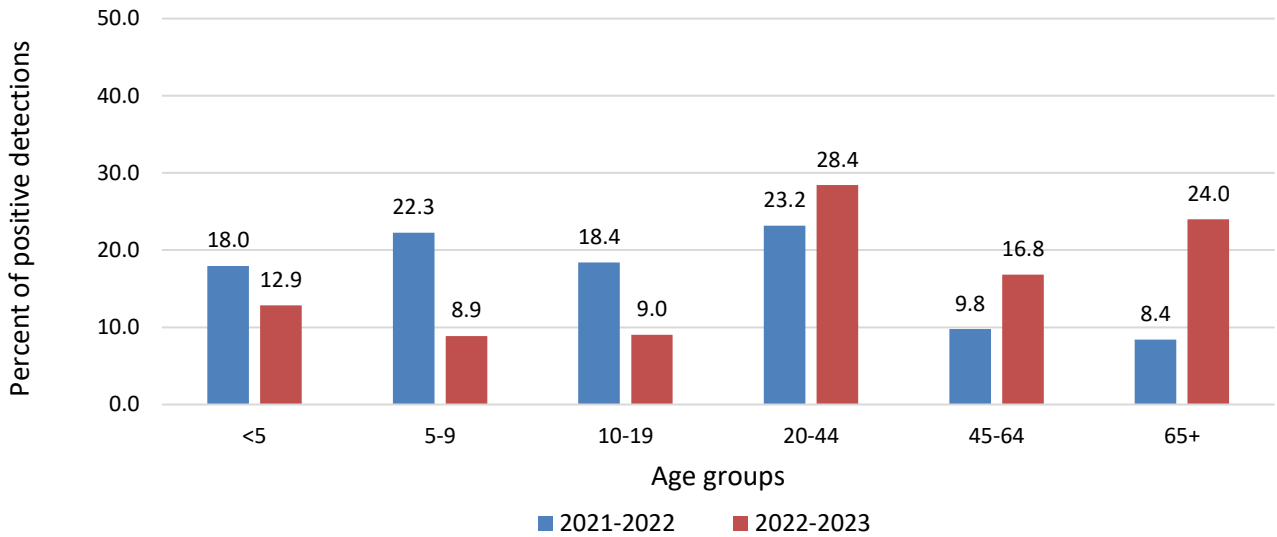
1) Influenza Laboratory Data¹ (Data source: Lab results from the Georges L. Dumont University Hospital Center)

Figure 1. Number and percent of positive influenza specimens in New Brunswick by week, up to August 19, 2023



¹ 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

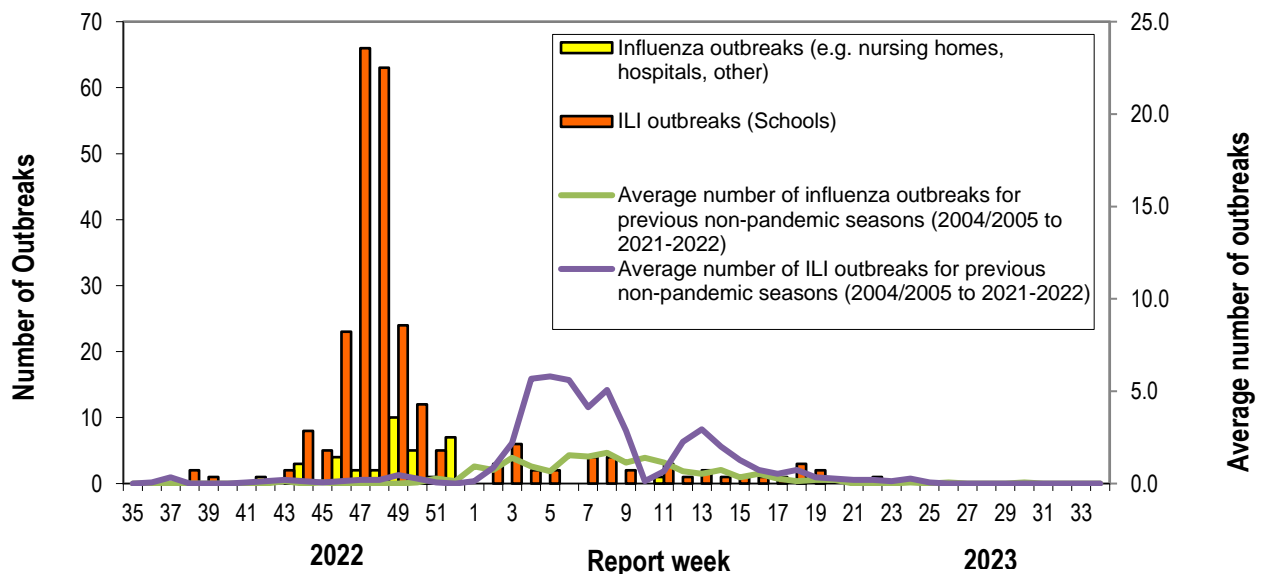
Figure 2. Distribution (%) of lab-confirmed positive detections, by age group, in New Brunswick, season 2022-2023 (data source: G. Dumont lab results)



2) **School Influenza-like illness (ILI) outbreak data²** (Data source: Canadian Network for Public Health Intelligence (CNPHI), submitted by Regional Public Health)

- This season, 250 influenza-like illness (ILI) outbreaks have been reported in schools compared to 93 school outbreaks during last season. The number of ILI outbreaks in schools should be interpreted with caution since the distinction between influenza-like-illness and COVID-like-illness is not always evident.

Figure 3. Number of influenza-like illness outbreaks in schools, in New Brunswick, for current and average for previous non-pandemic seasons, by report week, up to August 19, 2023.



² An ILI outbreak in a school is defined as greater than 10% absenteeism which is likely due to ILI.

3) **Nursing Homes Influenza Outbreak³ Data** (Data source: Influenza Outbreak Investigation Final Report submitted by Regional Public Health, hard copy)

- In NB, there are 72 licensed nursing homes, out of which 21 reported influenza outbreaks during this season.
- This is slightly higher than the average number of outbreaks reported in the previous two non-pandemic seasons (average of 20 outbreaks).
- Regional distribution of the nursing home outbreaks is presented in table 2.

Table 1. Influenza outbreak reports, by Region, for season 2022-2023.

Region	Total# of nursing homes	Total # of reported outbreaks
Region 1	17	4
Region 2	16	6
Region 3	17	5
Region 4	5	0
Region 5	2	0
Region 6	9	3
Region 7	6	3

- All were influenza A outbreaks. The first influenza outbreak was reported on November 2, 2022 and the last outbreak was reported on January 5, 2023.
- The median percentage immunized for residents was 95% (range 0%-100%) and the median percentage immunized for staff was 28% (range 5.4%-60%).
- The median ILI attack rate for residents was 5.7% (range 0.5% - 65.4%) and the median ILI attack rate for staff was 0.0% (range 0% - 19.0%).
- The median duration of the outbreaks⁴ was 12 days (range 6-34 days).
- The median duration between first ILI case and laboratory confirmation was two days (range 0-15 days).
- Thirty-three percent (7/21) of the nursing home outbreaks occurred throughout the entire facility versus 67% (14/21) that was considered a localized outbreak.
- Antiviral prophylaxis was recommended and administered in 90% (19/21) of the nursing homes outbreaks.
- Thirty-three percent (7/21) of the nursing home reported hospitalizations related to the outbreaks.
- Thirteen related deaths⁵ were reported from nine nursing homes that experienced influenza outbreaks.

4) **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 August 19, 2023)**⁶
 Figures 4, 5 & 6 and Table 2

- There have been **886 hospitalizations** reported, of which **80 were admitted to the ICU**.

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

⁴ 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.

⁵ These deaths occurred among ILI cases whether they had lab-confirmed influenza or not.

⁶ 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.

- Fifty-six percent of all hospitalizations occurred among individuals 65 years old or above in this current season similar to the 2021/2022 season.
- **Sixty-nine influenza related deaths have been reported:** 36 were males and 33 were females. The median age was 78 years (range 37-99 years). Deaths occurred in the period between October 20 2022 and June 19 2023. Eighty-two percent (57/69) had at least one risk factor⁷, eight (12%) were vaccinated, 21 (31%) were not vaccinated and the vaccination status was unknown for 40 (58%).
- Hospitalizations occurred between the period of September 1, 2022 and August 14, 2023. However some cases were hospitalized several months before influenza laboratory confirmation.
- The median length of stay was five days (range 1-297 days).
- The median age for hospitalization was 67 years (range 16 days-101 years).
- Most of the hospitalized cases were from Region 1 (26 %), followed by Region 3 (25%) and Region 2 (22%).
- Fifty-three percent (473/886) of the hospitalized cases were treated with antivirals.

B. Hospitalizations and ICU admissions by influenza type

- Ninety-nine percent (879/886) of the hospitalized cases were due to influenza A, and 1% (7/886) was due to influenza B.
- The median age for influenza A hospitalized cases was 68 years (16 days -101 years) and 29 years for the influenza B hospitalized cases.
- Nine percent (79/886) of all of the influenza A hospitalized cases were admitted to ICU (median age of 63 years). One influenza B case was hospitalized and admitted to ICU.
- There were 103 (12%) children under 10 years of age who were hospitalized, three cases were admitted to ICU.

C. Hospitalizations and vaccination status⁸

- Influenza vaccine is not recommended in infants less than six months.
- Fifteen hospitalized children were under six months of age and not able to receive the vaccine, therefore was excluded from the analysis of the vaccination status.
- Out of 871 hospitalized cases who could receive the vaccine, 256 were not vaccinated (29%) while 10% (84/871) received the vaccine; vaccination status was unknown for 61% of hospitalized individuals (531/871).
 - Of those with known vaccination status (Yes+No=340), 25% (84/340) were vaccinated.

NOTE: This proportion cannot be generalized to the whole hospitalized population, as 61% of cases report unknown vaccination status. These individuals may include vaccinated or unvaccinated individuals.
- Twenty-six percent (21/80) of cases admitted to the ICU didn't receive the current seasonal vaccination. 4% (3/80) received the vaccine, and the vaccination status is unknown for 70% (56/80).
- Of the hospitalized children under 10 years of age who could take the vaccine, 1% (1/88) received the vaccine, 38% (33/88) did not receive the vaccine and vaccination status was unknown for 61% (54/88).

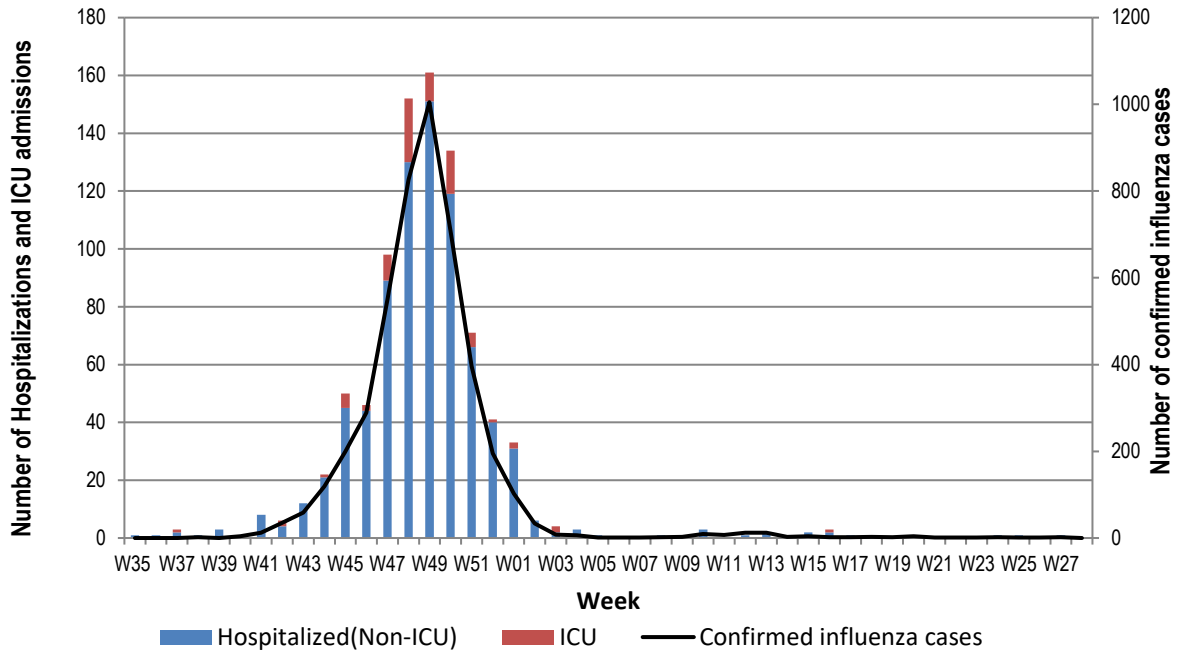
⁷ Risk factors include: chronic pulmonary disease, asthma, chronic heart disease, diabetes, kidney disease, immunosuppressed, cancer, chronic liver disease, anemia/hemoglobinopathy, chronic neurological disease, pregnant, First nations, obesity, current smoker, resident of a nursing home and children who have been treated with ASA for long period of time, and other chronic diseases.

⁸ The seasonal influenza vaccine is now available to all New Brunswickers aged six months and older.

D. Risk factors for hospitalization:

- Fifty-two percent of the hospitalized cases had at least two risk factors and 73% had at least one risk factor.
- In addition to age (being 65 years of age and older), the main prevalent risk factors in the hospitalized cases were chronic heart disease, chronic pulmonary disease, diabetes, smoking and asthma.

Figure 4. Number of Laboratory Confirmed Influenza Cases and Level of Care* by Report Week, New Brunswick (August 28, 2022 to August 19, 2023)



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

Figure 5. NB influenza-related Hospitalization, ICU admissions and Deaths by Age group, Influenza season 2022-2023 (Data up to August 19, 2023)

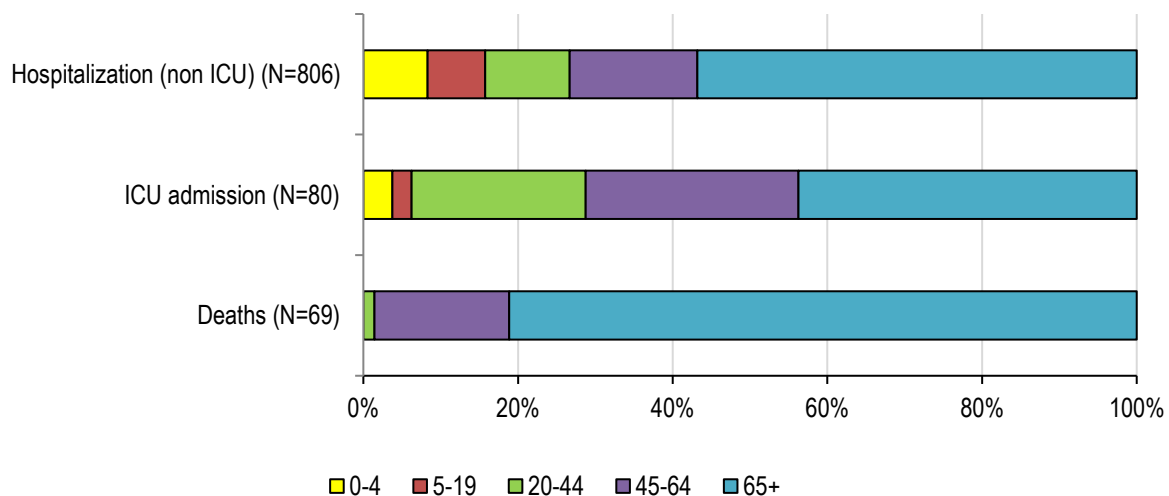


Figure 6. Rates of Influenza-associated Hospitalizations per 100,000 population, by age groups, in New Brunswick, season 2022-2023.

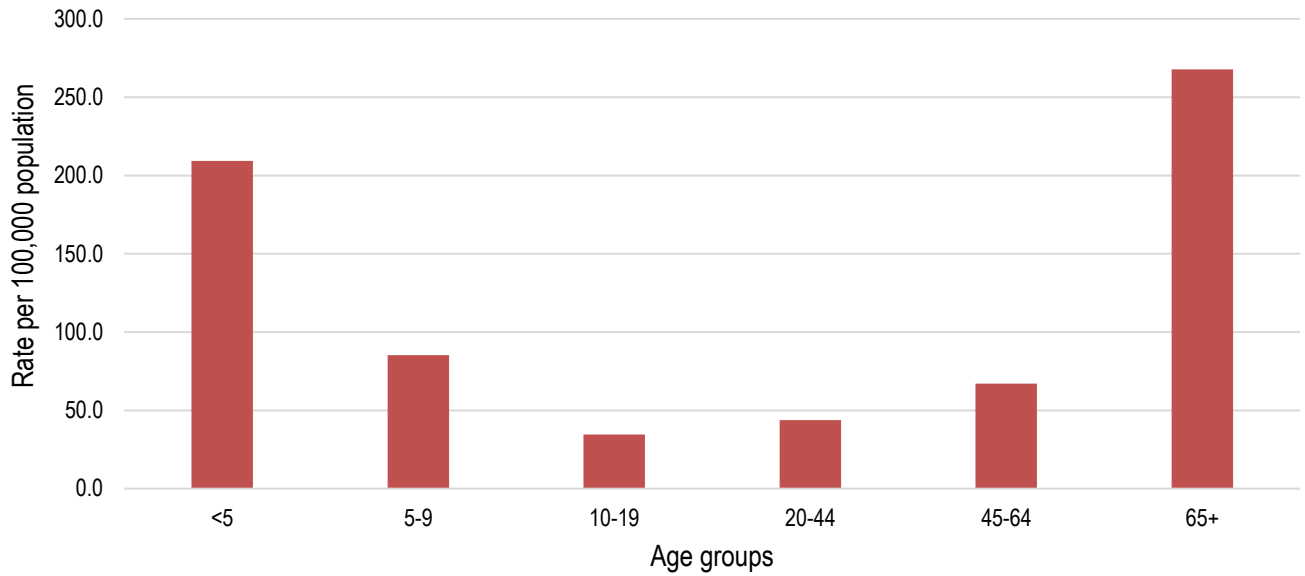


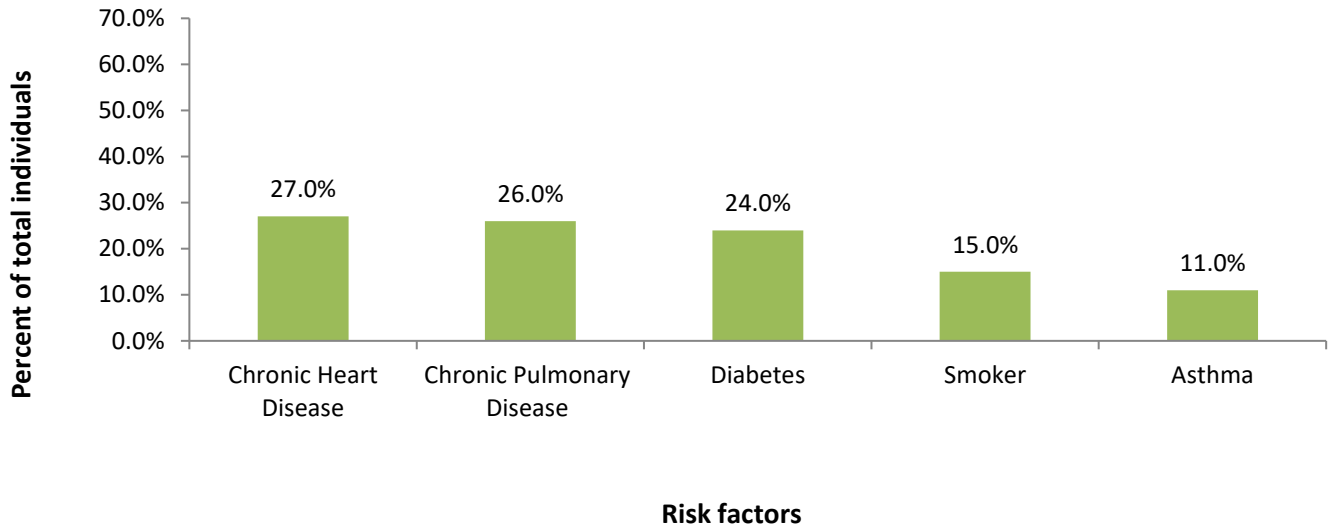
Table 2. NB influenza-related Hospitalization, ICU admissions and Deaths by Region, influenza season 2022-2023 (Data up to August 19, 2023)

		R1	R2	R3	R4	R5	R6	R7
Level of care	Hospitalization (not ICU)	210	178	211	67	25	65	50
	ICU admission*	18	17	11	13	4	6	11
	Total Hospitalization**	228	195	222	80	29	71	61

Notes for Table 2:

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

Figure 7. Predominant risk factors and co-morbid conditions in hospitalized cases, percentage of total hospitalized cases (Data up to August 19, 2023)



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