

Influenza season 2025-26: Experience from Canada

SARInet regional meeting
Panama
March 2026





Agenda

- Introduction and context
- Pre-season expectations
- What was observed
- Detailed epidemiological findings
- Detailed laboratory findings
- Conclusion



Background

- Since the 2024-25 season, COVID-19 and RSV has been integrated into the influenza surveillance program (formally FluWatch now FluWatch+)
- Remodeled national respiratory surveillance program to follow the WHO's Mosaic Framework
- The same surveillance indicators are used for each virus.
 - Ensures consistency, efficiency, and sustainability of the surveillance system to monitor multiple priority respiratory viruses
 - Can view the trends of individual viruses and view the full cumulative impact of all three viruses on the population
- More details for on the FluWatch+ system and surveillance indicators
 - <https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/about-fluwatch.html>



Influenza Trends 2025-26 season in Canada – Epidemiology



What was expected.....

- Signal in the fall about early activity and increasing dominance of A(H3N2) subclade K – a mismatch to the vaccine strain
 - A(H3N2) dominant seasons generally have higher impact and higher burden compared to A(H1N1)
 - Further exacerbated by vaccine mismatch
- Expectation of a high impact and high burden season, similar to the 2014-2015
- Public Health Alert was sent by the Public Health Agency of Canada to public health officials and practitioners about this potential mismatch and its effects on the upcoming influenza season



....What was observed

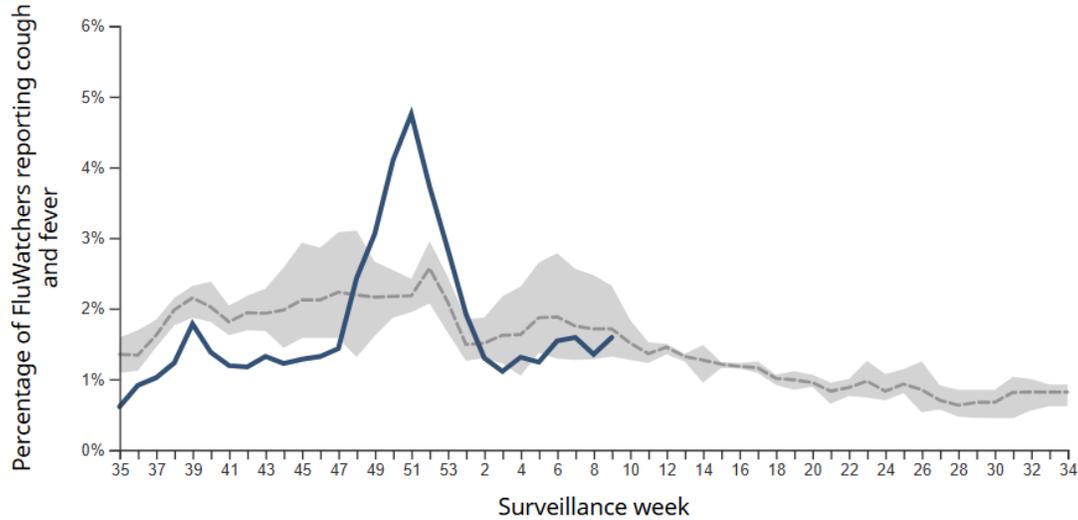
Overall impact and burden of influenza in the 2025-25 season was not as high as predicted

- Transmissibility peaked at extraordinary levels
 - Extraordinary levels (2 weeks); high levels (2 weeks); moderate levels (2 weeks); remainder were low
- Seriousness was at levels seen in previous seasons
 - Hospitalization:ICU ratio were within values seen in previous seasons
- Morbidity and mortality peaked at levels not seen in previous seasons
 - Number of weekly hospitalizations were much higher than previous seasons for a period of time; however, overall rate and number of hospitalizations were lower than last season

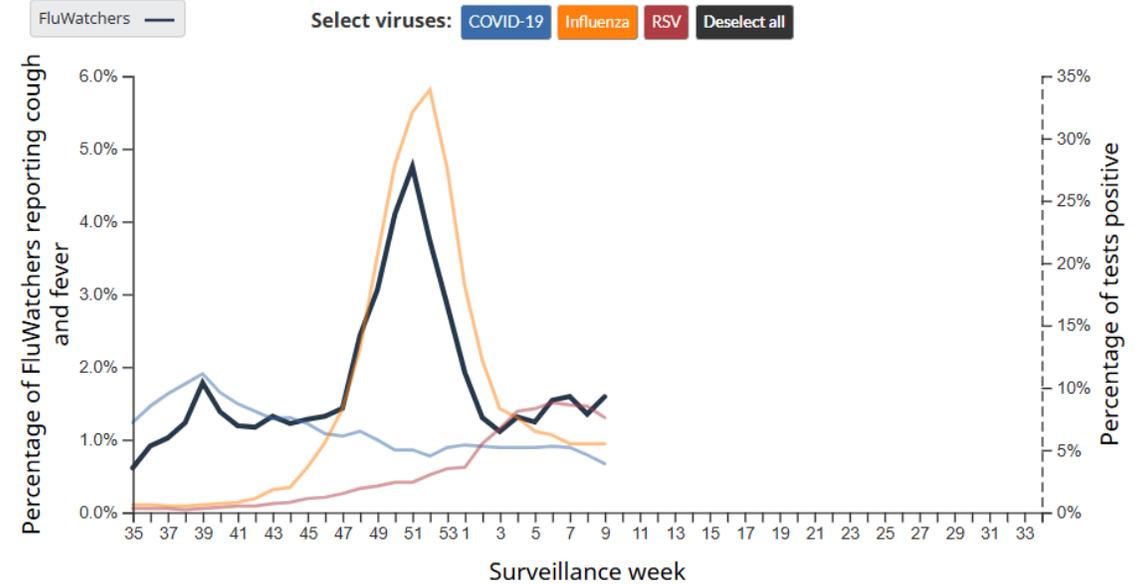
These trends observed are more likely a reflection of high activity occurring in a short period of time rather than more serious disease

Transmissibility – ILI

Percentage of participants (FluWatchers) reporting cough and fever in Canada



Percentage of participants (FluWatchers) reporting cough and fever in Canada, compared to % positivity of influenza, COVID-19 and RSV

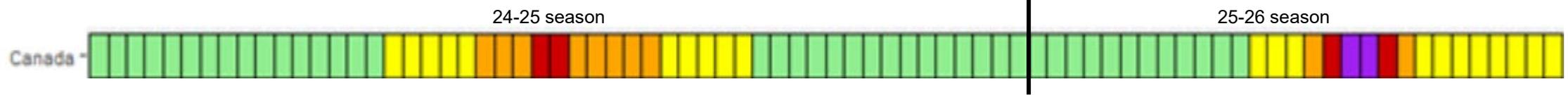


Trends observed

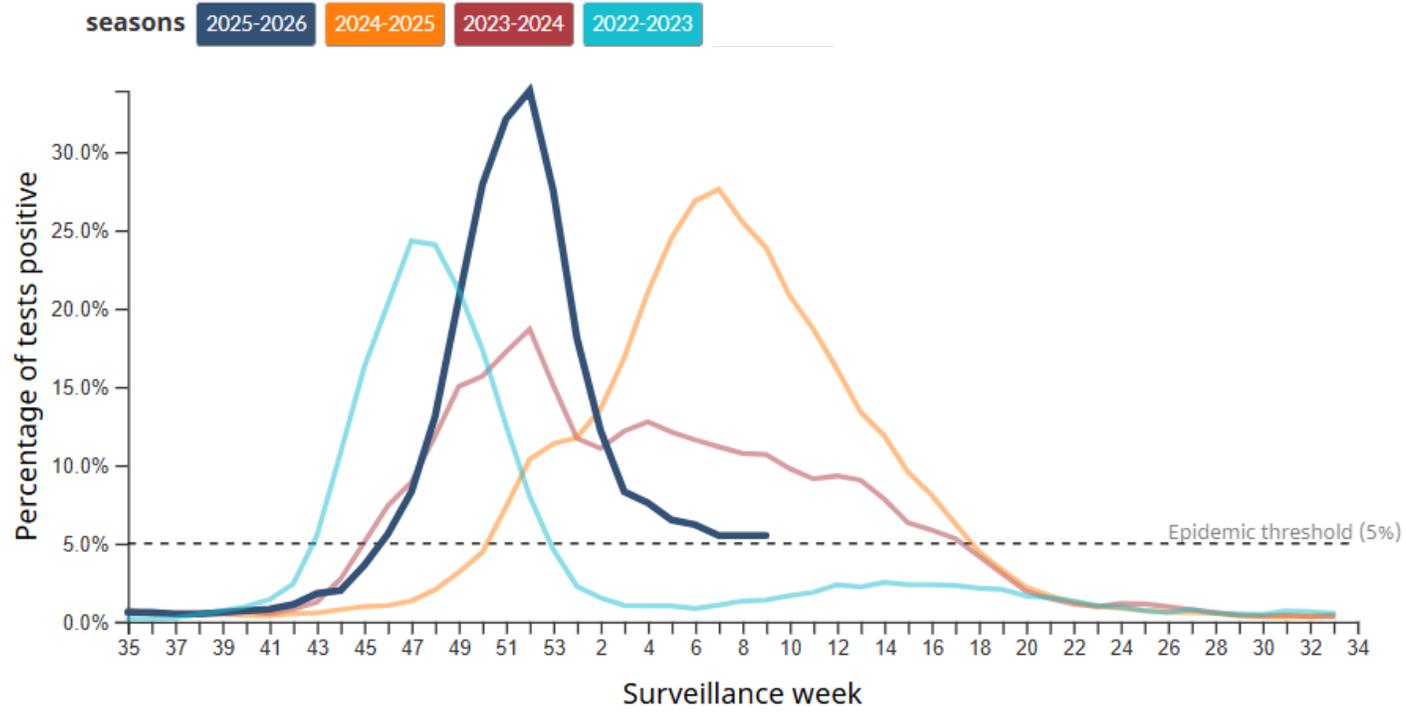
- % participants reporting cough and fever peaked at the highest value seen compared to the past three seasons
- Peak corresponded to when influenza was peaking
- Signal that influenza transmission was high in the community (non-hospitalized population)



Transmissibility – Laboratory Trends



Percentage of tests positive for influenza in Canada by season



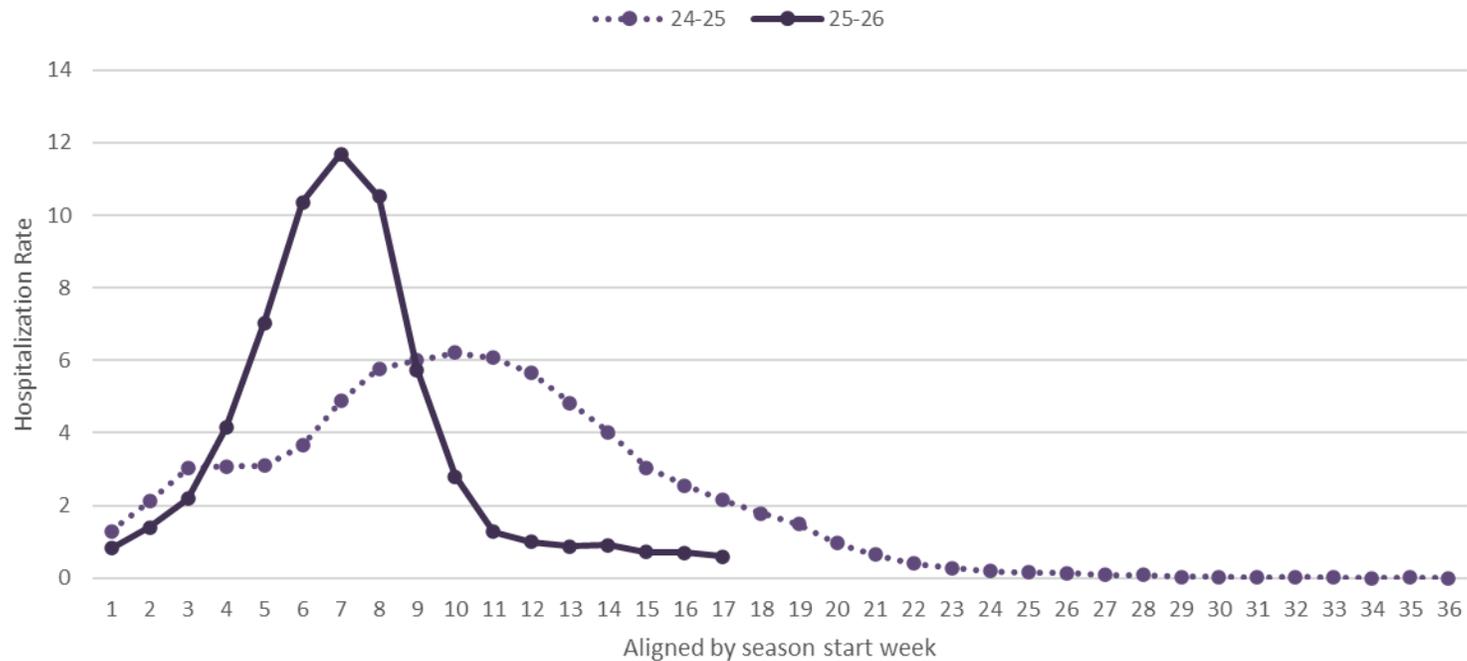
Trends observed

- Percent positivity peaked at the highest value seen compared to the past three seasons
- Peak activity concentrated in a narrow timeframe
- As of March 7, 2026, 95% of influenza detections were influenza A; among subtyped influenza A detections, A(H3N2) accounted for 84%



Morbidity and Mortality – Weekly hospitalization rate

Weekly rate of hospitalizations compared to last season (aligned by season start: week 51 (24-25) and week 47 (25-26))

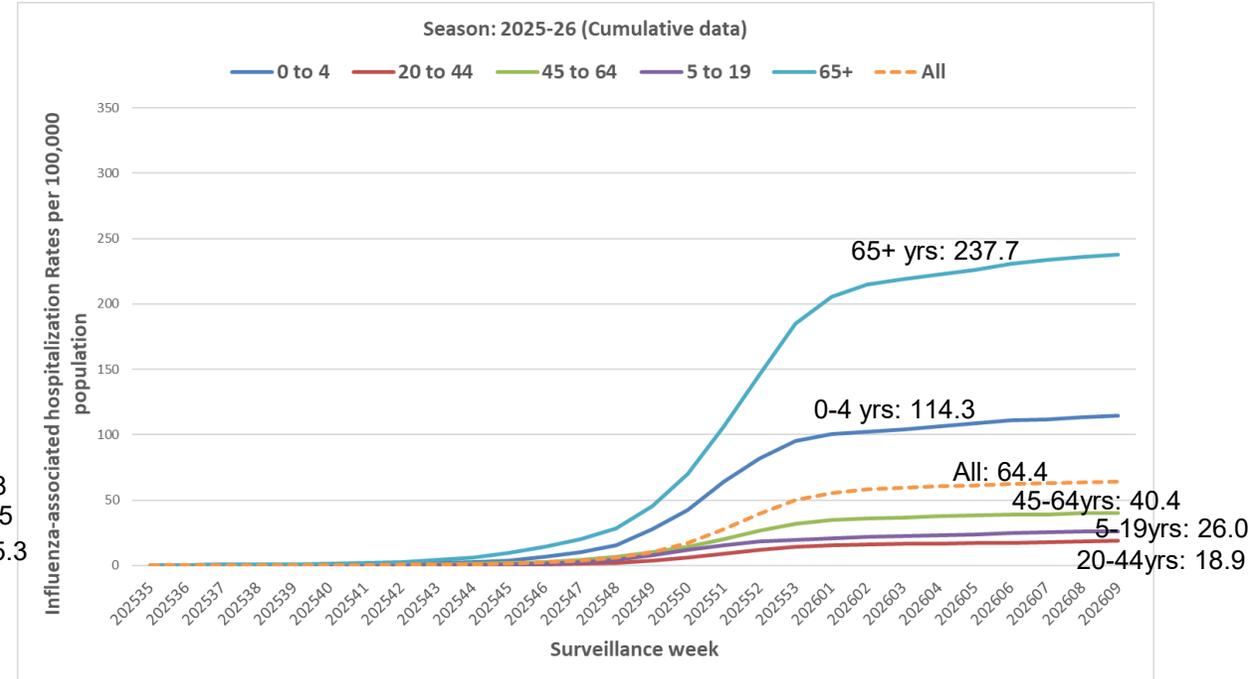
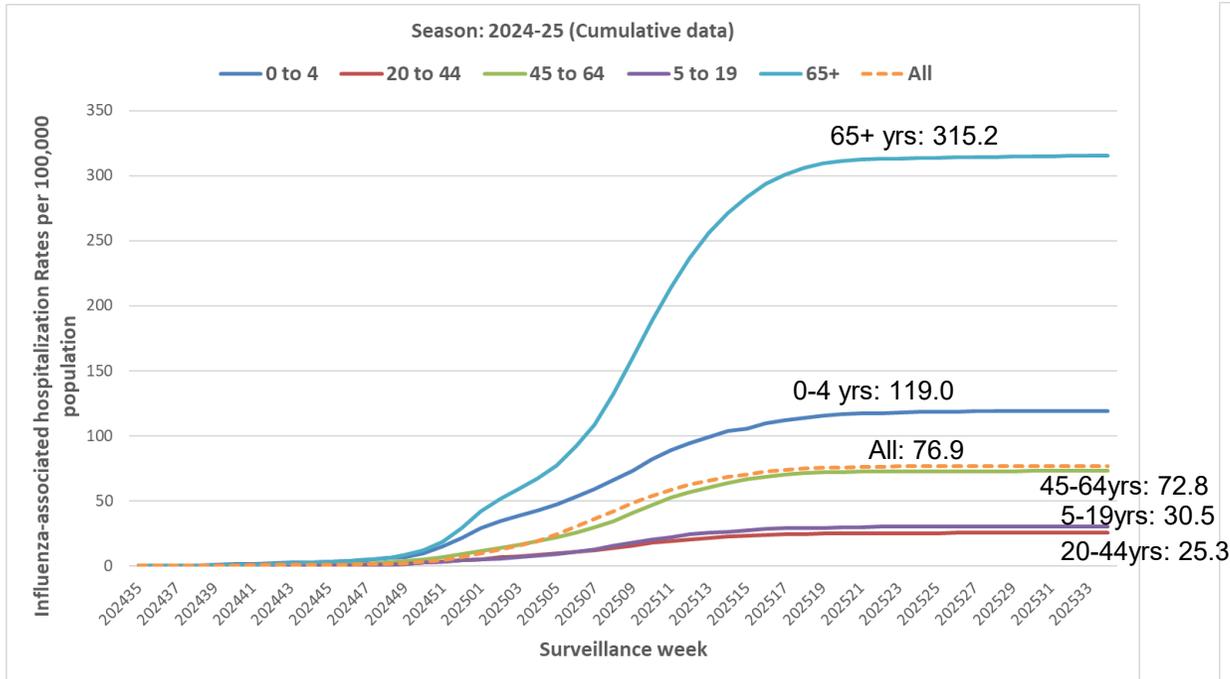


Trends observed

- Weekly hospitalization rate was much higher for a period of 5 weeks compared to last season
- Otherwise for the remaining weeks of the epidemic, the weekly hospitalization rate was below that of last season

Morbidity and Mortality – Cumulative hospitalization rate

Cumulative rate of hospitalizations by age group



Trends observed

- Cumulative hospitalizations rates to date are lower compared to the totals from the 24-25 season, especially in the 65+ age group



Morbidity and Mortality – ICU and Deaths

- As of March 7, 2026, the cumulative influenza ICU admission rate was 5.9 ICU admissions per 100,000 population for the 2025-26 season
 - Last season the cumulative influenza ICU admission rate was 8.2 ICU admissions per 100,000 population
- As of March 7, 2026, 467 influenza-associated deaths have been reported for the 2025-26 season
 - Last season the 697 influenza-associated deaths were reported

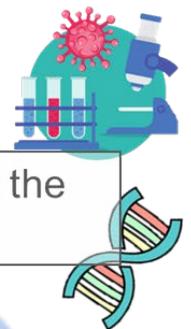
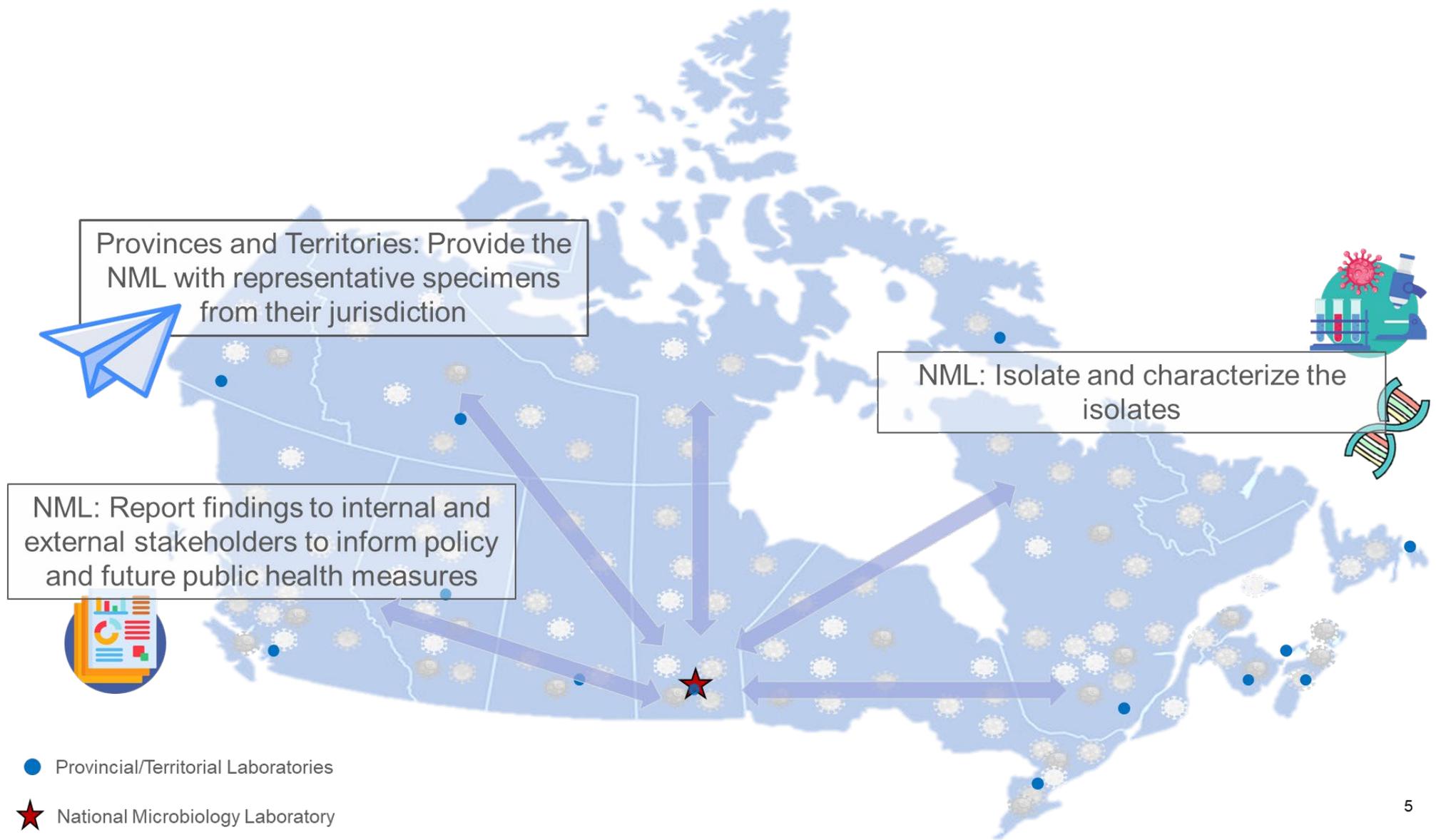
Seriousness – % hospitalizations resulted in ICU

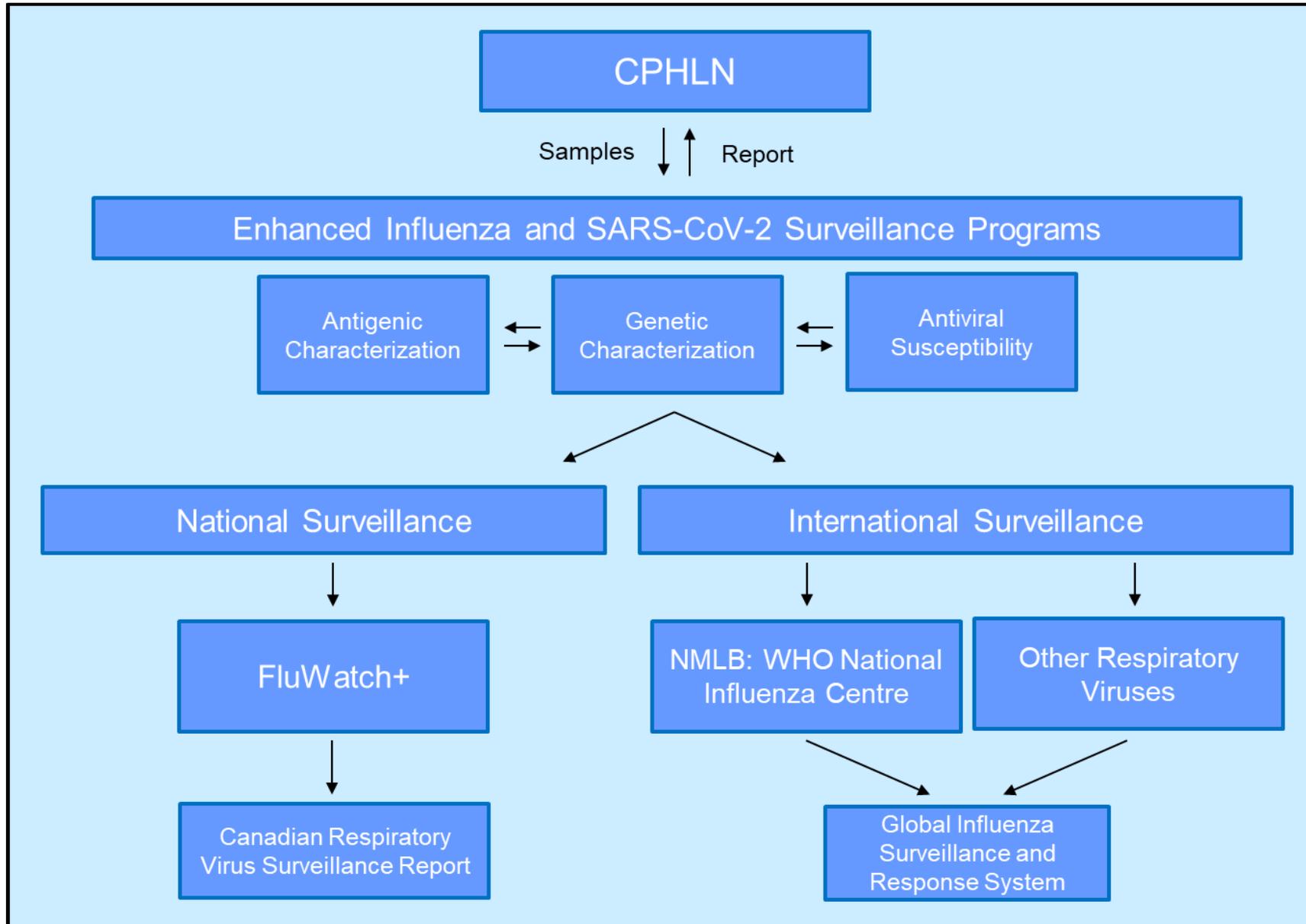
- As of March 7, 2026, 8.6% of hospitalizations were admitted to the ICU in the 2025-26 season
 - Last season 8.7% of hospitalizations were admitted to the ICU



Influenza Trends 2025-26 season in Canada – Virology

2025-26 influenza season in Canada







Results of antigenic characterization, by hemagglutination inhibition assay comparing circulating influenza isolates to their respective cell culture vaccine reference viruses in Canada, 2025-2026 season.

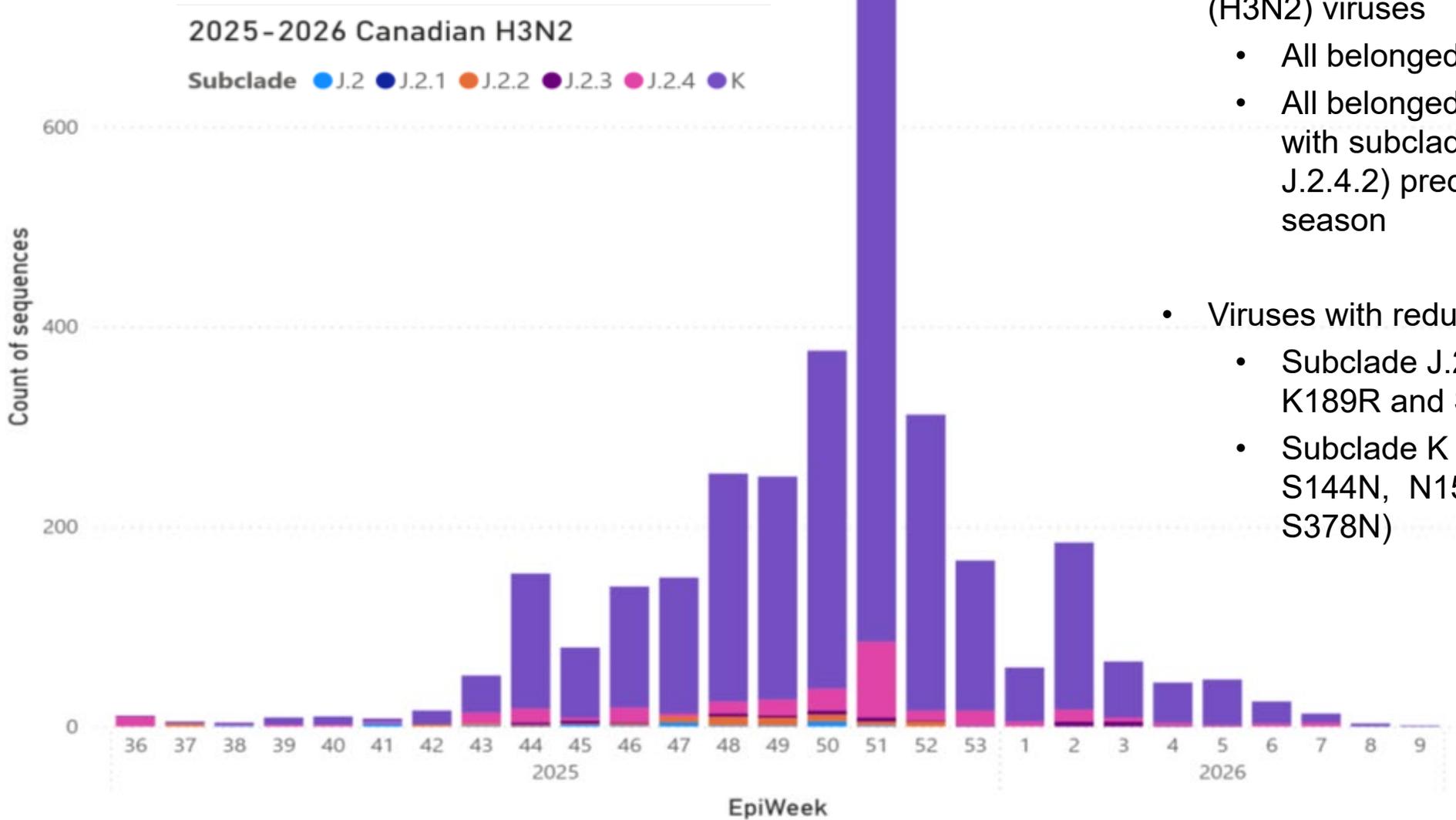
Virus subtype or lineage	Similar reactivity	Reduced reactivity
A(H1N1)	332	3
A(H3N2)	57	1051
B/Victoria	97	20

Note: A Circulating viruses are considered to have similar reactivity with an <8-fold HI titre reduction compared to the vaccine reference virus and reduced reactivity with an ≥8-fold HI titre reduction.

Recommended cell culture components for the 2025-2026 Northern Hemisphere Influenza vaccine.

- A/Wisconsin/67/2022 (H1N1)pdm09-like virus
- A/District of Columbia/27/2023 (H3N2)-like virus
- B/Austria/1359417/2021 (B/Victoria lineage)-like virus

2025-26 influenza season in Canada

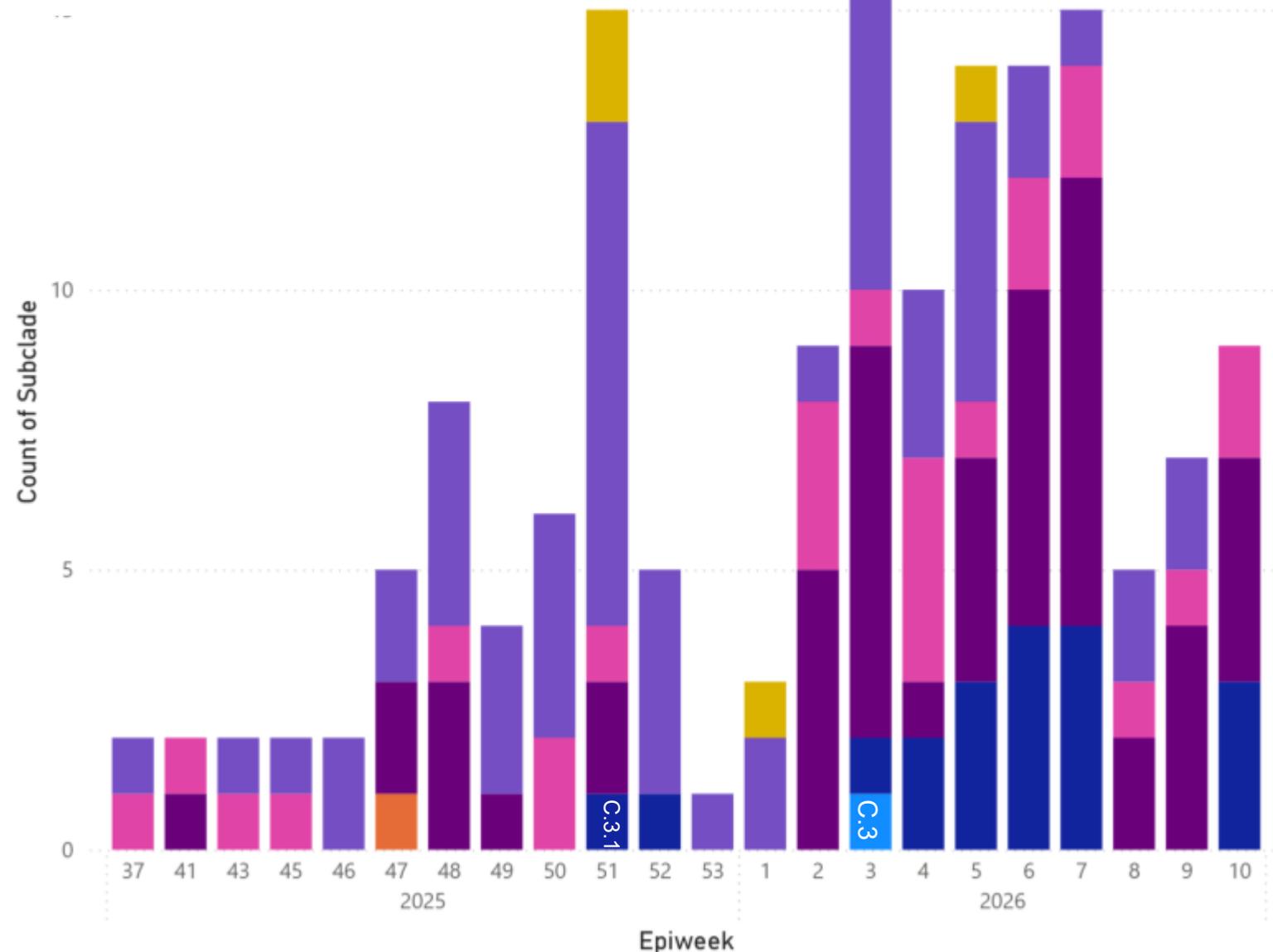


- Sequences were available for 3168 influenza A (H3N2) viruses
 - All belonged to clade 2a.3a.1
 - All belonged to one of the J.2 subclades, with subclade K (formally designated J.2.4.2) predominating throughout the season
- Viruses with reduced reactivity belonged to:
 - Subclade J.2.3 (characterized by N158K, K189R and S378N)
 - Subclade K (characterized by K2N, S144N, N158D, I160K, Q173R, T328A and S378N)

2025-26 influenza season in Canada

2025-2026 Canadian Flu B

Subclade ● C.3 ● C.3.1 ● C.5 ● C.5.1 ● C.5.6 ● C.5.6.1 ● C.5.7



- Sequences were available for 156 influenza B viruses
 - All belonged to clade 3a.2
 - Majority belonged to subclade C5 and its descendents
- Viruses with reduced reactivity
 - Belonged to subclade C.3 (E128K, A154E and S208P) and C.3.1 (additional D197N, P208S mutations)
 - Have been detected in increasing proportion in recent weeks



Summary

- Influenza activity in Canada was very high for a short period of time
- Compared to the previous season, where it was considered a high impact and high burden season, this season appeared to have a lower impact and lower burden (less hospitalizations, less ICU admissions) despite the vaccine mismatch
- Currently, keeping an eye on influenza B; however, overall detections remains low
 - Majority of influenza B viruses analysed belonged to subclade C5 and its descendents
 - Subclade C.3.1 viruses have been detected in increasing proportion in recent weeks
- Influenza trends in Canada are continuously evolving compared to pre-pandemic
 - Epidemiology of A(H3N2) → A(H3N2) is accounting for a growing proportion of detections among the pediatric season to season post-pandemic
 - Epidemiology of A(H1N1) → A(H1N1) is accounting for a growing proportion of detections among the older adult season to season post-pandemic