



# Respiratory Virus Trends in Alberta Communities: 2018-2024 Analysis

Contreras, D<sup>1</sup>, Chukwu, C<sup>1</sup>, Zelyas, N<sup>2</sup>, and Dickinson, J<sup>1</sup>

<sup>1</sup>TARRANT Viral Watch, Department of Family Medicine, University of Calgary

<sup>2</sup>Alberta Precision Laboratories

## Background

- Viral surveillance can detect epidemics and circulating strains in the community.
- COVID-19 disrupted the usual patterns of seasonal respiratory viruses in 2020.
- Have the usual patterns of seasonal respiratory viruses returned to normal since?

**Objective:** To describe trends in respiratory viruses in the community from 2018 to 2024.

## Methods

Design: Community sentinel viral epidemiological study in Alberta.

Participants: volunteer family physicians ("Sentinels") working in community clinics in Alberta.

- Sentinels obtain swabs from patients presenting with influenza-like illness.

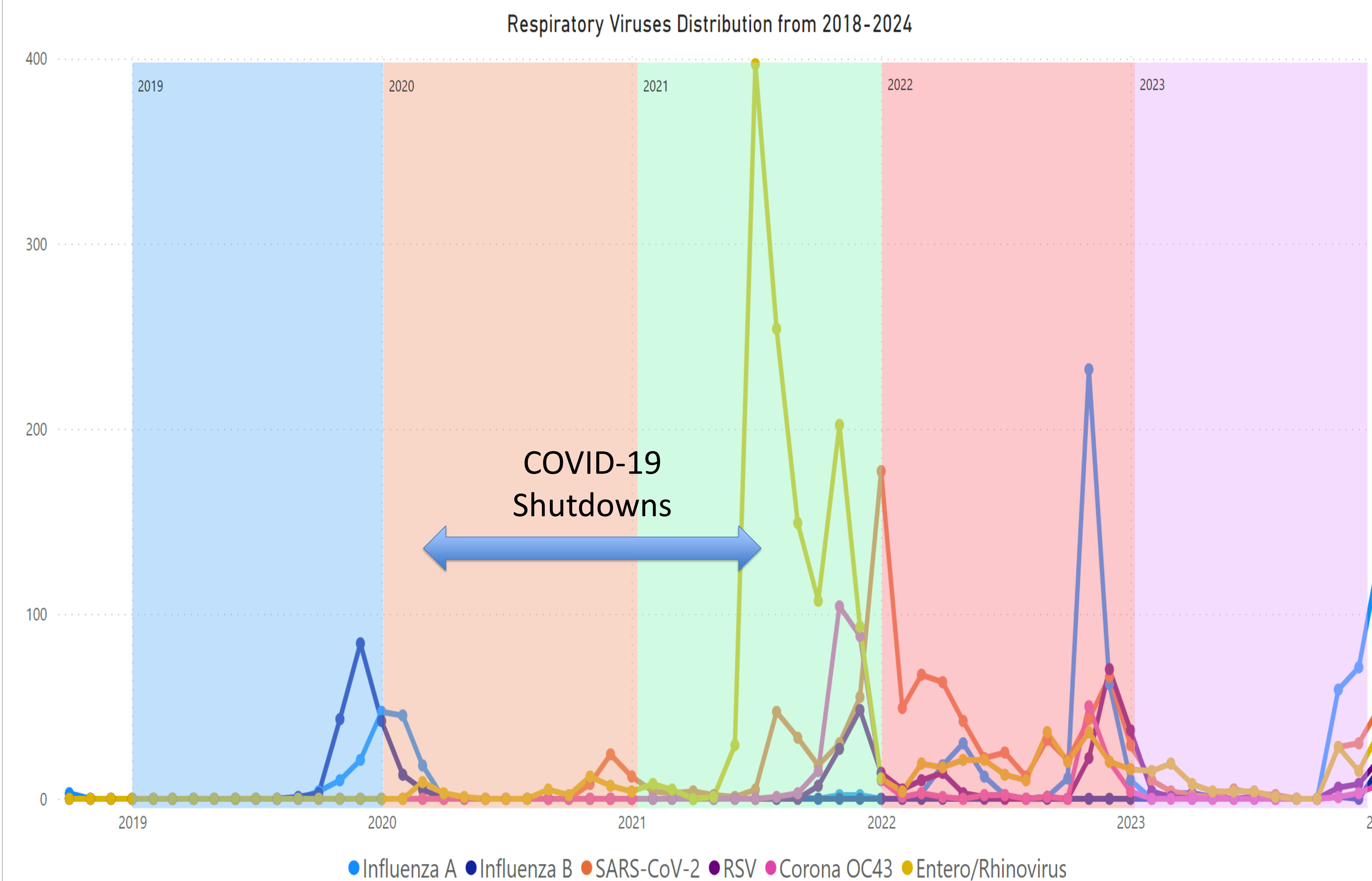
Outcomes: Time-sequence tallies of laboratory-confirmed cases of the most common viruses observed: **Influenza A, Respiratory Syncytial Virus (RSV), Enterovirus/Rhinovirus, Coronavirus OC43, and SARS-CoV-2.**

- The number of cases was compared between males and females over the years (2018 to 2024) using the Chi-squared Test.
- As of January 2024, we have received n=6670 specimens.

Table 1. Study characteristics.

	Total (N=6670)
Sex	
Female	4003 (60)
Male	2658 (39.9)
Other	1 (0)
Age	
< 1 year	38 (0.6)
1-10 years	1073 (16.1)
11-20 years	760 (11.4)
21-60 years	5036 (60.3)
> 61 years	769 (11.5)

## Results



- The Winter 2020 rise in SARS-CoV-2 cases in the community disrupted the seasonal influenza A and B patterns (Figure 1).
- TARRANT sentinels were able to capture various COVID-19 waves in Alberta in December 2020, August 2021, and January 2022.
- SARS-CoV-2 has been consistently detected in the community every winter since December 2022, alongside the resurgence of seasonal influenza.
- The number of COVID-19 cases was very low during the summer of 2023 and picked up again in November.
- In this current season, we see the usual rise in Influenza A cases, along with Enterovirus/Rhinovirus, SARS-CoV-2, and RSV.
- Fewer males participated than females.

Table 2. Number of viral cases by sex.

	Influenza A*	Influenza B	SARS-CoV-2	RSV	Enterovirus/Rhinovirus*	Corona OC43
Female	207 (53.6)	119 (59.8)	524 (61.1)	119 (59.5)	895 (57.1)	672 (42.9)
Male	179 (46.4)	80 (40.2)	333 (38.9)	81 (40.5)	155 (57.8)	113 (42.2)
Total	386	199	857	200	1567	268

Data show count and proportion. \* indicates statistical significance between sexes (p<0.05).

## Discussion

- The pattern of regular winter influenza epidemics was interrupted by the COVID-19 pandemic in winter 2020. No other viral epidemics were detected that year until a rise in influenza in December.
- Our surveillance captured the rise in COVID-19 cases during the successive waves.
- We show the resurgence of other viruses to provide a mix of viral diseases in the community.
- COVID-19 now appears to be endemic, appearing annually and with cases peaking every December.